American Druggist and Pharmaceutical Record.

Founded 1871

VOL. XXVIII. No. 3.
WHOLE No. 344.

NEW YORK, FEBRUARY 10, 1896.

Issued Semi-Monthly.

ISSUED SEMI-MONTHLY BY THE

AMERICAN DRUGGIST PUBLISHING CO.,

65 West Broadway, New York.

A. R. ELLIOTT, President.

CASWELL A. MAYO, Ph.G., - - - - - - - Editor.
THOMAS J. KEENAN, - - - - - - Associate Editor.
IRVING J. BENJAMIN, - - - - Business Manager.

SUBSCRIPTION PRICE.

If paid in advance direct to this office - $1.50
For Foreign Countries - - - - - - - - 2.50
Single Copies - - - - - - - - - - - - .15

NET ADVERTISING RATES.

	24 Times	12 Times	6 Times	1 Time
One Page....	$864.00	$480.00	$270.00	$50.00
Half " ...	456.00	258.00	144.00	27.00
Quarter " ...	240.00	138.00	78.00	15.00
Eighth " ...	132.00	75.00	42.00	8.00
One Inch	48.00	27.00	15.00	3.00

Special Rates for Cover and preferred positions will be quoted on Application.

The AMERICAN DRUGGIST AND PHARMACEUTICAL RECORD is issued on the 10th and 25th of each month. Changes of advertisements should be received by the 1st and 15th of each month.

We are not responsible for any money paid to agents. All communications should be addressed to the American Druggist Publishing Co., 65 West Broadway, New York, and all remittances made payable to them.

Leading Articles.

The critcism of Mr. MacEwan of the *Chemist and Druggist*, directed against Professor Walker's method of assaying spt. æther nitrosi, as described in our issue of January 25, has brought forth a reply from Professor Walker.

We continue in this issue, on page 81, the valuable paper on the detection of the newer medicaments.

The practical pharmacist will appreciate the paper on new methods and practice on page 84.

Elbert E. Fisher of Bridgeport, Conn., has communicated the results of some experiments in the preparation and preservation of syrup of ferrous iodide on page 82.

How to prepare for a board examination is told on page 82 by the president of the Wisconsin Board of Pharmacy.

Toilet waters and their preparation forms the subject of a paper by H. L. Grimes on page 83.

A very exhaustive article on the detection of certain abnormal ingredients in the urine forms the subject of a paper by F. W. Haussman of Philadelphia on pages 85, 86 and 87.

The increasing attention which is being given to the study of digestive proteolysis will make the paper on digestive ferments, on page 87, one of particular interest to the pharmacist.

Kola, that widely advertised drug, is the subject of a valuable paper by Fred. B. Kilmer on page 90.

ENFORCING THE PHARMACY LAWS.

THERE has always been a considerable contingent of pharmacists who have felt inclined to ask, "Of what benefit are pharmacy laws to us?" though but few have publicly propounded this question. Any benefit which may accrue to pharmacists from pharmacy or poison laws must be incident to and not an object of legislation, for these, like all other laws, are for the protection of the public. Pharmacists may reap some benefit from the enforcement of correctly drafted laws, but the public is so suspicious that as soon as serious efforts are made to enforce a law against any other than a pharmacist a great outcry against "class legislation" is at once raised.

CLASS LEGISLATION.

This is illustrated by the conditions existing just now in Chicago and in Brooklyn. In both these cities an effort is being made to enforce the pharmacy law. In both cities this effort has provoked opposition, backed by the cry of "class legislation." In Chicago the effort to enforce the law through appeal to the criminal courts has met with a rebuff at the outset, an indictment found against a druggist for the illegal practice of pharmacy having been dismissed in the first case which came up for trial. It is to be presumed, however, that the Illinois Board will not let the matter rest here, but will take other means to secure the enforcement of the law.

ENFORCING THE LAW IN BROOKLYN.

In Brooklyn the campaign has just begun, the opening taking the form of an order from the Superintendent of Police instructing officers to strictly enforce the pharmacy law. This move on the part of the police is an outcome of a personal inspection of the groceries, &c., made by DONALD L. CAMERON, president of the Kings County (Brooklyn) Board of Pharmacy. It has long been the custom for the board to have an annual inspection of the drug stores of Brooklyn, which generally meant that an employee of the board visited each drug store in the city and ascertained whether or not the proprietor and his employees were properly licensed. Mr. CAMERON, who was elected president of the board last spring, not content with this perfunctory performance, himself undertook the inspection, not confining his attention to drug stores. He found that the law restricting the sale of poisons to licensed persons was totally ignored all over the city and that no one outside the drug business seemed even to be aware of its existence.

GROCERS SELLING POISONS.

In the windows and on the shelves of the smaller grocery stores of the suburbs he found stocks of laudanum and canned corn, carbolic acid and chocolate displayed in the windows and on the shelves in an indiscriminate mixture. Mr. CAMERON found no difficulty in freely purchasing from these grocers a variety of poisons which are not sold in drug stores save by licensed clerks and on registration of the name of the purchaser. Mr. CAMERON found a stock of drugs in every one of the 25 grocery stores which he visited and each of the grocers was warned that he was violating the law. The department stores transgress the law even more flagrantly than do the grocery stores, and Mr. CAMERON assures us that a case will be speedily brought against them.

AS THE PUBLIC VIEW IT.

Unfortunately for the proper enforcement of the law the public, as has already been noted, stand in such dread of being imposed upon by the erection of a privileged class that they give at best but lukewarm support to the poison and the pharmacy laws. Though quick to condemn any lapses on the part of the druggist, the newspapers readily condone transgressions of the law by others than pharmacists. In commenting on the action of the board, for instance, the Brooklyn *Citizen* says:

Until the board brings suit against one or more of them who are alleged to be violating

the law the question whether they are or not will be undetermined. Ostensibly the object of the law is to prevent the people from obtaining poisonous preparations, either with innocent or with criminal intent, even druggsits being forbidden to sell the same except on the prescription of a physician. Those tradesmen who sell such articles believe that the law, at bottom, is really intended to protect the retail druggists against an invasion of their trade by others, and they are supported in this belief by the fact that poisonous articles may be obtained from druggists without a physician's prescription, as in the case of certain patent medicines in which there may be poison enough if the bottle's contents were all taken at once, to kill half a dozen men.

Such a treatment of the subject by the newspaper press renders the task of enforcing the law a most difficult one. It leads the transgressors to look upon themselves in the light of martyrs, suffering from unjust persecution, and has a generally demoralizing tendency in encouraging contempt for established law. If the laws are good they should be enforced. That they do benefit the public when enforced must be conceded by every one who has made an adequate study of the subject.

THE NEW PHOTOGRAPHY.

SINCE the publication of our last issue more complete details have been received as regards the character of the photographs produced by Professor ROENTGEN and the nature of the agent which produces them.

PROFESSOR ROENTGEN'S THEORY.

The investigator says that there appears to be some sort of relationship between the new rays and the ordinary light rays, since both cast shadows, produce fluorescence and exert [chemical action. ROENTGEN'S rays are not identical though they are associated with the cathode rays of CROOKES. He has observed that in the passage through air a smaller proportion of the X rays than of cathode rays are absorbed. Again, the direction of the latter can be changed by a magnet while the course of the former cannot. He believes, however, that the origin of the "X rays," as he terms them, is at that portion of the walls of the tube where the cathode rays produce the most brilliant phosphorescence. Now, with a magnet, one can turn the cathode rays so that they will impinge on a different spot, and the X rays will thus be generated in a new place. But wherever developed the latter proceed thereafter in a straight line, unaffected by a magnet. The Professor believes that it is unnecessary to have the walls of the vacuum tube entirely of glass. The impact of the cathode rays on an aluminum plate or window at the end of the tube would be equally efficacious, in his opinion, in producing the newly found radiance.

Ultra violet rays can (1) be turned from their course if passed from air into water, or through carbon disulphide, aluminum, rock salt and some other substances; (2) they can be reflected at the surface of the bodies named; (3) they are subject to the laws of "polarization," and (4) their absorption by bodies through which they pass depends on the density of the latter. Elaborate experiments by ROENTGEN himself show that the X rays behave in none of these ways.

It has long been known that aside from the transverse vibrations of light rays in ether, longitudinal vibrations are possible and, according to many physicists, they must occur; their existence, however, has not as yet been proven and consequently their propreties have not been experimentally investigated. While not as yet prepared to positively assert that the new rays have a longitudinal vibration, Professor ROENTGEN states that during the course of his investigation he is more and more inclined to accept this theory as the correct explanation of the phenomena observed, "but the hypothesis advanced still requires a more solid foundation."

PROPERTIES OF THE NEW RAYS.

The newly discovered rays seem to have the faculty of penetrating all bodies, though with a marked difference in the time and presumably in the strength of the rays required for penetrating different substances. In none of the substances so far examined by ROENTGEN has there been shown any appreciable refraction or reflection of the new rays, although the substances which are not completely permeable by these rays give a kind of diffuse reflection, such as is shown to light by a strong smoke or a heavy fog.

THE PREDECESSORS OF ROENTGEN.

Others have preceded ROENTGEN in this work, though their results have not been carried to any practical end. LEONARD published in 1894 in the *Annalen der Physik und Chemie* photographic reproductions very similar to those of ROENTGEN. The late Professor ULTZMANN in 1891 made some photographs of a young woman by means of the light from a CROOKES tube, but was dissatisfied with the results, as the finished picture showed a large number of blotches upon the face, whereas the subject had a very clear, smooth skin. A second experiment gave the same results. Some 14 days later ULTZMANN was called in as a physician to this lady and found, to his surprise, that her face had broken out with an eruption, which produced exactly the same effects as were shown in the previous photographs. The director of the Royal Prussian Astronomical Observatory has contributed an article to the *Reich's Anzeiger*, in which he claims for Professor HITTORF the priority over CROOKES in discovering the peculiarities of the cathode light of what is now known as Crookes tube; he also states that the character of the cathode rays was studied thoroughly by GOLDSTEIN, who many years ago showed that these rays could produce photographs. Professor BELL of telephone fame also made some experiments in this direction and some interesting discoveries ten years ago.

AMERICAN INVESTIGATORS.

The first successful experiments with the new photography in the United States were those conducted by Professor TROWBRIDGE of Harvard University and Professor WRIGHT of Yale University. These experimenters produced photographs, drawings of which we are enabled to publish elsewhere through the courtesy of the New York *Journal*, the first paper to publish any photographs of this kind in this country. Extracts from the articles by Professors TROWBRIDGE and WRIGHT which accompanied the illustrations in the *Journal* are published in this issue.

LIQUOR LEGISLATION IN NEW YORK.

IT is difficult to determine the cause of the apathy of New York druggists to their material as well as their scientific interests. This apathy was shown in the fact that the only representatives of the retail drug trade who appeared at the hearing on the RAINES liquor license bill at Albany recently were the members of a committee of the King's County Pharmaceutical Society. Under the RAINES bill every druggist would have been compelled to take out a license at a fee of $250 annually. This committee, however, proposed amendments under which two classes of druggists' licenses are provided for, one allowing him to sell on the prescription of a physician only, the prescription not to be repeated. The fee for this license is put at $5. The second-class druggist's license, for which $20 is the fee, permits of the sale of liquor for medicinal purposes only, with or without a physician's prescription, in quantities of not more than 24 ounces, the sale not to be repeated within 24 hours to any member of the same family. While these amendments have not been formally accepted, Mr. RAINES has signified his willingness to consider them, with a view to possibly incorporating them or some such provisions in his bill. This is not the first time that the druggists of the State at large have allowed the druggists of Kings County to pull their chestnuts out of the fire.

Written for the American Druggist and Pharmaceutical Record.

THE ASSAY OF SPIRIT OF NITROUS ETHER.*

BY PROF. DAVID WALKER, PH.G.,

Kansas City College of Pharmacy.

I am pleased to note that my article upon the assay of spirit of nitrous ether has attracted the attention of Mr. Peter MacEwan, whose criticism of the process appears in your journal for January 25. I must admit that I was not aware of its having been suggested by any one. A search through my books of reference and files of journals, failed to inform me of that fact. The trouble seems to have been that the process was abandoned before I began the study of pharmacy, whether deservedly so or not, it remains for us to decide.

It did not seem possible for me to have obtained results so uniform, when compared with the nitrometric tests, from so many samples of spirit varying so greatly in nitrite strength, if the process (under the conditions and restrictions proposed in my former article) was as fallacious as Mr. MacEwan would have us believe it to be.

COMPARATIVE TESTS.

In order to determine the exact variation, comparative tests with the same sample of spirit were made with the nitrometer, as well as with the titration process. Further investigation had shown that five minutes maceration was ample for the completion of the reaction, and consequently the maceration was limited to exactly five minutes for each test with Sample A. The readings of the nitrometer were made at intervals of five minutes, during one hour, in each test.

It is usually stated that the reaction in the nitrometer is practically completed in five minutes.

Sample A, a U. S. P. spirit made six months previous, and having a specific gravity of 0.818, gave the following results by tritation with sodium thiosulphate solution:

RESULTS OF TEN TITRATIONS BY MY METHOD.

Sample.	1st. Ccm.	2d. Ccm.	3d. Ccm.	4th. Ccm.	5th. Ccm.	6th. Ccm.	7th. Ccm.	8th. Ccm.	9th. Ccm.	After 1 hour maceration. Ccm.
A.....	18.3	18.5	18.6	20.1	19.7	18.5	18.3	18.9	19.2	22.5
B.....	8.9	7.9	9.1	9.4	9.1	8.0	9.5	8.5	8.2	15.0

Taking the extreme results, 18.3 and 20.1 ccm., we find the variation to be as follows:

1 ccm. $\frac{N}{10}$ Sodium thiosulphate solution = 0.012653 gm. 18.3 ccm. = 18.3 × 0.012653 = 0.2315499 gm. Iodine.

Then as 126.53 : 0.2315499 :: 74.87 : ×, × = 0.137012 gm. $C_2H_5NO_2$.

5 ccm, sp. gr. 0.818 = 4.09 gm.

0.137012 ÷ 4.09 = 3.35 + per cent. of $C_2H_5NO_2$.

The other extreme, 20.1 ccm. = 0.1504-096 gm., or 3.677 + per cent. of $C_2H_5NO_2$.

One lot of the mixture was allowed to macerate in the open flask for one hour before titration when it required 22.5 ccm. to discharge the color, indicating 0.1684567 gm., or 4.118 + per cent. $C_2H_5NO_2$.

The nitrometer readings, for Sample A, barometric pressure, 743 mm. temperature 9 degrees C. were as follows:

TEN NITROMETER READINGS OF THE SAME SAMPLE.

Sample.	1st. Ccm	2d. Ccm	3d. Ccm.	4th. Ccm.	5th. Ccm.	6th. Ccm.	7th. Ccm.	8th. Ccm.	9th. Ccm.	10th. Ccm.	11th. Ccm.	
A.....	47.2	47.5	47.8	48.0	48.2	48.3	48.3	48.4	48.5	48.5	48.5	First trial.
A.....	47.0	47.3	47.5	47.8	48.0	48.2	48.4	48.5	48.6	48.8	48.9	Second trial.
B.....	16.2	16.4	16.5	16.6	16.7	16.7	16.7	16.7	16.7	16.7	16.7	First trial.
B.....	12.3	13.2	13.5	13.6	13.8	14.0	14.1	14.3	14.5	14.8	14.9	Second trial.

Taking lowest reading of first trial and making corrections for temperature and barometric pressure, we find:

47.2 ÷ 1.032967 (1 + 9 × 0.003663) = 45.7 ccm. at 0 degrees C.

(45.7 × 743) ÷ 760 = 44.68 ccm. at 0 degrees C. and 760 mm.

0.0053529 × 44.68 = 0.149807572 gm. $C_2H_5NO_2$.

0.149807572 ÷ 4.09 = 3.662 + per cent. of $C_2H_5NO_2$.

The highest reading, 48.5 ccm., at 10 degrees C., gives: 0.153395175 gm., or 3.750 + per cent. of $C_2H_5NO_2$.

Second trial, lowest reading, 47 ccm., at 10 degrees C. = 0.148466412 gm., or 3.630 + per cent. of $C_2H_5NO_2$.

The highest reading 49 ccm. at 11 degrees C. = 0.154367516 gm., or 3,774 + per cent. of $C_2H_5NO_2$.

Sample B. F. F. F. niter sp. gr. 0.925, gave extremes by titration:

7.9 ccm. = 0.059147 gm., or 1.279 + per cent. of $C_2H_5NO_2$.

9.5 ccm. = 0.0711265 gm., or 1.537 + per cent. of $C_2H_5NO_2$.

After one hour's maceration the mixture required 15 ccm., to discharge the color, indicating 0.112304 gm., or 2.427 per cent. of $C_2H_5NO_2$.

The extremes of first trial by nitrometer after corrections for temperature (14 degrees C.) and barometric pressure (741 mm.) gave the following results:

16.2 ccm. = 0.050327029 gm., or 1.088 + per cent. of $C_2H_5NO_2$.

16.7 ccm. = 0.05163466 gm., or 1.112 + per cent. of $C_2H_5NO_2$.

By the second trial the lowest reading, 12.5 ccm. = 0.03822306 gm., or 0.826 + per cent. of $C_2H_5NO_2$; the highest, 14.9 ccm. = 0.046404136 gm., or 1.003 + per cent of $C_2H_5NO_2$.

To be sure, it requires careful work to obtain accurate results, but by the time Mr. Careless Man made corrections for temperature and barometic pressure, etc., he in all probability would be as wide of the mark as by the titration process. The time required is so short, that, if in doubt, several trials can be made, and results verified.

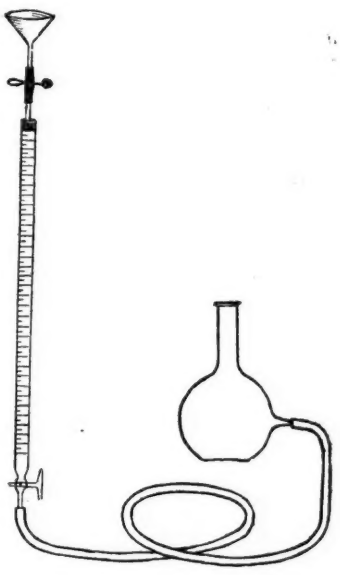
The variations seem greater when operating with a low grade spirit, by the nitrom-tric test as well as by titration.

Mr. MacEwan's burette nitrometer is similar to an extemporized apparatus used by myself a year ago for class demonstration.

The burette was used in its natural position, and after filling with salt solution a rubber stopper bearing a short glass tube connected with a small funnel by a short rubber tube, was inserted until a perfect joint was made.

This forced the solution up into the neck of the funnel and by means of a Mohr's pinchcock a tight joint was secured. Then by opening the stopcock of the burette, the point of which was connected with a rubber tube, a little longer than the burette, the other end being connected with a 4-ounce tubulated receiver by means of a rubber cork and glass tube, an easy control of the height of liquid in the equilibrium tube was provided.

The burette was graduated so near to the top that the rubber stopper left only a small space to be determined. By inverting the burette the space between the graduation and stopcock could be more accurately determined and would remain constant, but if the spirit was any where near the U. S. P. strength the equilibrium tube of Mr. MacEwan's apparatus would be uncontrollable.



WALKER'S EXTEMPORIZED BURETTE NITROMETER.

DOMESTIC AMMONIA.

[*Wiener Drogisten Zeitung.*]

The increasing use of ammonia in the household makes the following of some interest:

Borax	60 gm.
Oil of cinnamon	10 drops
Oil of cloves	8 drops
Oil of citronella	6 drops
Alcohol	3 grams
Ammonia water	7.5 liters

*See this journal for January 25, page 58.

PHARMACEUTICAL PROGRESS.

Fire Proof Ink.—White paper has been prepared, by using borax, asbestos, etc., which will not burn. There has so far been no ink prepared which when subjected to fire is not either destroyed or rendered illegible. Lüders of Gorlitz, however, publishes (*Pharm. Centralh*) a formula as follows, which he claims will furnish an ink the legibility of which will not be affected by fire: Mix 40 parts of finely powdered graphite, 72 parts of gum copal, 3.5 parts of ferrous sulphate, 3.5 parts of tincture of galls and 14 parts of indigo sulphate, add to a sufficient quantity of water, boil and then cool, when the ink is ready for use.

Ammonia in Corks.—In our last issue (page 45) it was noted that the reaction with Nessler's reagent which was observed to occasionally take place with water in which fresh and presumably clean corks have been boiled was due to tannin and not to ammonia. A rejoinder (*Schweiz Wochenschr. für Pharm.*) states that it is from a practical point of view immaterial whether the reaction is due to tannin or to ammonia; for in either case it vitiates the results. Experiments showed that when tannin was mixed with absolutely ammonia free water and the water distilled, a sufficient quantity of the tannin came over to give the disturbing reaction with the Nessler reagent. In view of this fact it would therefore be desirable to follow the instructions issued by the Association of Swiss Analytical Chemists to the effect that all corks before being used for stopping up bottles of water intended for analysis should be boiled in water for some time.

The Valuation of Peppermint Oil.—According to the results obtained by Andres (*Apotheker Zeitung*) peppermint oil contains the following ingredients: 1, A hydrocarbon, $C_{10}H_{16}$, menthene; 2, a hydrocarbon, $C_{10}H_{18}$, dihydromenthene; 3, two oxygen compounds, $C_{10}H_{20}O$, menthol; and $C_{10}H_{18}O$, menthone. The value of the oil depends chiefly on the small quantity of unsaturated and large quantity of saturated compounds. Bukowsky has now examined 15 different samples of the oil, Polish, German and English, and has used especially the modified iodine absorption process proposed by Andres. The oil was fractionated (the saturated compounds boil at the higher temperatures) and the fractions noted. Into a flask holding about 150 ccm., 1 gm. of the oil dissolved in 10 ccm. of chloroform was placed, and 20 ccm. of Hübl's solution added. If the mixture becomes colorless after standing for some time, 5 to 15 ccm. more iodine solution are added. The titration was carried out in the usual way. The average absorption is placed by the author at 81.

Dilution of Urine Before Examination.—Zeehuisen argues in favor of the older methods for the detection of albumin, sugar and bile pigments in urine as being preferable to the many new methods. At the same time he directs attention (*Deutch Med. Wochenschr*, 1895, 52) to the great importance of diluting the urine before examination to a uniform specific gravity of 1.005. When this is done the nitric acid test gives the sharpest reaction with even a trace of albumin, while the physiological constituents present do not, in this diluted form, reduce Fehling's solution as they sometimes do if the undiluted urine is used.

The Detection of Salycilic Acid in Food, Etc.—Van Ledden-Hulsebosch gives (*Pharm. Weekblad*, No. 35) the following simple process: Put 15 or 20 c.cm. of the fluid under examination into an extraction apparatus (if a solid either dissolve it in water or mix it with boiling water), having first freed it from alcohol if any be present. Then extract with ether for half an hour; pour the condensed ether on the surface of a weak aqueous solution of ferric chloride, and allow to evaporate spontaneously. A distinct violet coloration will be produced in the presence of as little as 1-100 mg. in 25 c.cm. of the fluid examined.

Crystallization of True Digitalin.—The characteristic disposition to separate out in grains from a saturated solution which is shown by true digitalin has caused Kiliani to conclude that it is not entirely uncrystallizable. He therefore undertook some experiments in this direction (*Arciv. der Pharm.* Bd. 233, 9), using other solvents than alcohol or diluted alcohol, but without any results. He was enabled, however, to obtain the glucoside in crystalline form by crystallizing it out at high temperatures. Methyl alcohol proved the best solvent for this purpose. Kiliani placed 2 parts of methyl alcohol and 1 part of pure true digitalin in a receptacle provided with a back-flow condenser and boiled until complete solution was effected. He then allowed the temperature to sink gradually to 43 degrees C., and kept it at this temperature for several hours. Fine white needles separate out, but unfortunately only to the amount of about one-fifth of the quantity of the glucoside originally used, while the needles themselves at a lower temperature become granular in appearance and become sticky if the mother-liquor is drained or filtered off.

Chloroform from Carbon Tetrachloride.—Carbon tetrachloride, which is much used for technical purposes, may be made to furnish chloroform (*L Union Pharm.*, 1895, 11) by a reduction process conducted in an apparatus, such as is generally used in the preparation of aniline. In this are placed 150 kg. of carbon tetrachloride, 200 kg. of water, 100 kg. of sulphuric acid and 80 kg. of zinc. The closed apparatus, provided with a back flow condenser, is then heated, and the hydrochloric acid evolved is led off and condensed in special receptacles, while the chloroform and the undecomposed carbon tetrachloride are condensed in the back-flow condenser and returned to the boiler. The process is complete when no more chlorine is evolved on heating. The contents of the apparatus then consist of a concentrated solution of zinc sulphate beneath a layer of a mixture of chloroform and undecomposed carbon tetrachloride. The two layers are separated, the chloroform isolated by fractional distillation and the residual carbon tetrachloride used in the next operation. If it is preferred the hydrochloric acid evolved may be taken up in an autoclave by having present a sufficient quantity of zinc to do so. A mixture of 60 kg. of hydrochloric acid (22 degrees B.), 50 kg. of zinc and 75 kg. of carbon tetrachloride may be used in place of the sulphuric acid mixture without recourse to heat. According to the first formula, 150 kg. of carbon tetrachloride yields 100 kg. of chloroform and 30 kg. of a mixture of chloroform and tetrachloride, which may be used in a susequent operation. Furthermore, there are produced 100 kg. of hydrochloric acid of 20 degrees B.

The Preparation of Ergotine.—Professor Gaudin of the School of Medicine and Pharmacy of Angers, recommends the following process for preparing ergotine: 500 gm. of the freshly powdered ergot are mixed with 1.5 gm. of tartaric acid and 50 gm. of animal charcoal; the mass is moistened and extracted after standing for 12 hours, with water containing a small quantity of some harmless preservative. The liquid thus obtained is evaporated on the water bath to the consistency of a syrup, and 2.5 gm. of chalk are added. After 12 hours a weighed quantity is dried in order to determine the proportion of solid matter. Alcohol is then added to precipitate the mycose and the phosphates. The following formula gives the amount of 90 per cent. alcohol that is to be added. If E be the percentage of water $\frac{79\ E}{21}$ will bring the mixture to the proper strength for the best precipitation. After agitation, and then rest for 24 hours, the filtered liquid is evaporated on the water bath with repeated stirring; 0.75 gm. of salicylic acid is added and the product made up to 500 gm. with an aromatic water. It is then of such a strength that 1 gm. represents 1 gm. of the original ergot.—*B. and C. Druggist.*

Solders for Glass.—Charles Margot finds that an alloy composed of 95 parts of tin and 5 of zinc melts at 200 degrees, and becomes firmly adherent to glass, and, moreover, is unalterable, and possesses a beautiful metallic luster; and, further, that an alloy composed of 90 parts of tin and 10 of aluminum melts at 390 degrees, becomes strongly soldered to glass, and is possessed of a very stable brilliancy. With these two alloys it is possible, says the *Pottery Gazette*, to solder glass as easy as it is to solder two pieces of metal. It is possible to operate in two different manners. The two pieces of glass to be soldered can either be heated in a furnace and their surfaces be rubbed with a rod of the solder, when the alloy as it flows

can be evenly distributed with a tampon of paper or a strip of aluminum, or an ordinary soldering iron can be used for melting the solder. In either case it only remains to unite the two pieces of glass and press them strongly against each other, and allow them to cool slowly.

The Detection of the Newer Medicaments.

(*Continued from page* 48.)

ALPHOL (SALICYLIC ALPHA NAPHTYL ESTER).

This substance yields with sulphuric acid a yellow color (1 to 60,000). With sulphuric acid and nitric acid it turns blue and then green; with traces up to 1 to 120,000 it turns green at once. With sulphuric acid two drops of furfurol and 1 ccm. of water it turns violet, and on addition of ferric chloride green, and of acetone vapor yellow. With Fröhde's reagent it turns green (1 to 80,000). With vanadium sulphate solution* it turns green, changing upon addition of a small quantity of water to reddish brown.

BETOL (SALICYLIC BETA-NAPHTYL ESTER).

This gives with sulphuric acid yellow, and with a little nitric acid an olive green (difference from salol). With sulphuric acid, 2 drops of furfurol and 1 ccm. of water it gives a rose red color, turning to violet (1 to 120,000). With sulphuric acid and ferric chloride it gives a violet color, turning to reddish brown. With sulphuric acid and sodium nitrite it turns to a red brown which on heating changes to violet. With warm sulphuric acid and sodium nitrite, when cold, it turns blood red followed by rose and yellow rings. With vanadium sulphate solution, in the presence of sulphuric acid, it turns green; blue and violet streaks then form. Boiled with potassium hydrate and chloroform it turns blue. In alcoholic solution it gives a violet coloration with ferric chloride.

BENZONAPHTOL (BENZOIC BETA-NAPHTOL ESTER).

With sulphuric acid it turns yellow, changing to violet with green fluorescence when heated. With sulphuric acid and potassium nitrate it turns to a brownish black. With sulphuric acid and potassium nitrite it turns violet, followed by red and blue. With sulphuric acid and ferric chloride it turns violet and then red. With sulphuric acid and ammonium molybdate it turns to a bluish violet, then red, then green, and finally blue (1 to 60,000). With Fröhde's reagent the sulphuric acid solution turns violet. With vanadium sulphate solution it turns violet, followed by red and blue (1 to 30,000). With sulphuric acid, 2 drops of furfurol and 1 ccm. of water it turns violet (1 to 1,000). With sulphuric acid and cane sugar it turns violet and later blue. With sulphuric acid and 20 per cent. of acetol it turns yellow. When heated with alcohol sodium hydrate and chloroform it turns blue.

ALPHA NAPHTOL.

A 15 per cent. solution turns violet upon the addition of sugar and twice its own volume of sulphuric acid. In 15 per cent. solution it yields a precipitate upon the addition of one drop of a solution composed of 1 part of potassium bichromate and 1 part of nitric acid in 10 parts of water. In a dilute solution of sodium hydrate it turns blood red on the addition of 0.05 gm. of sulphanilic acid dissolved in 5 ccm. of normal sodium hydrate solution and of 0.02 gm. of sodium nitrite dissolved in 5 ccm. of normal sulphuric acid, and upon the addition of sulphuric acid it turns brown. This is known as Richardson's test. On shaking 0.2 gm. of alpha naphtol with 0.2 gm. of mercuric chloride and 0.1 gm. of sodium nitrate and 10 ccm. water at 100 degrees C. a slight scarlet deposit is formed.

BETA NAPHTOL.

This gives a negativea rection with sulphuric acid and sugar. With potassium bichromate and nitric acid it gives no reaction. With Richardson's test it yields a yellowish red color which is not changed on the addition of dilute sulphuric acid. With mercuric chloride, etc., it yields an abundant brown precipitate. Warmed with concentrated potassium hydrate and chloroform or chloral solution it turns blue.

CRESOL SALOLS.

All the cresol salols when in alcoholic solution turn violet on the addition of ferric chloride, and the color is discharged on the addition of hydrochloric acid.

Meta cresol with sulphuric acid and potassium nitrite turns orange, brown and then green. With Fröhde's reagent it turns blue, green and finally bluish black. With sulphuric acid and vanadium sulphate solution it turns blue, then green and finally greenish brown.

Paracresol turns to a red brown and finally cherry red color on the addition of sulphuric acid and nitric acid. With sulphuric acid and nitrous acid it turns red, then brown and finally green. With sulphuric acid and potassium bichromate it turns green. With sulphuric acid and furfurol water it turns orange. With vanadium sulphate it turns green, blue and finally violet (1 to 50,000). With Fröhde's reagent it turns blue, then violet and finally reddish brown (1 to 6,000).

Ortho cresol with sulphuric acid and potassium nitrate turns yellow, then green and finally orange. With sulphuric acid and potassium nitrite it turns yellow, then green, finally blue, rose or violet. With Fröhde's reagent violet streaks appear and the mixture turns later to a bluish green. With vanadium sulphate an olive green is formed. With sulphuric acid and potassium bichromate it turns orange and later olive green. With sulphuric acid and furfurol water it turns orange and then violet.

Benzo paracresol.—With sulphuric and nitric acid this turns orange (1 to 1,000). With sulphuric acid and potassium nitrite it turns a dark reddish brown and later red (1 to 6,000). With sulphuric acid and ammonium molybdate it turns green, with blue streaks, and later turns blue. With Fröhde's reagent it turns a deep blue, then green and then brown (1 to 30,000). With vanadium sulphate it turns to a reddish violet rapidly changing to reddish brown.

(*To be continued.*)

* This reagent consists of a solution of 0.1 gm. of ammonium vanadinate in 10 ccm. of concentrated sulphuric acid. The reaction is carried out in the same manner as Fröhde's reagent.

SOAP POWDER.

[*Drogisten Zeitung.*]

	Parts.
Calcined soda	1,500
Powdered soap (ordinary washing)	250
Powdered borax	250

The Value of a Pharmaceutical Journal to the Pharmacist.*

By Richard H. Kimball,
Hartford, Conn.

The real value of a pharmaceutical journal to a druggist may be said to depend largely upon whether the druggist is up to date or a back number. In these days of new remedies, new chemicals and new compounds, there is scarcely a week or a day passes but there comes a demand (either from the physician in the form of a prescription, or from some patron) for some new derivative of coal tar, some new chemical or some new principle which has been isolated. The druggist who is keeping up in the race wants to be posted about these things and able to answer all questions which may be asked him about them. The books of reference which he may have give no information. Where then shall he look? Why, to his drug journal, of course. The druggist who does not keep posted on these new things gets badly left in the race after pharmaceutical knowledge. What can be more annoying to a drug gist who is not an old fogy or a back number than to have inquiry made for or about something which he is unable to furnish or give information? Often, yes, quite often, we are called upon by the physician to give information about some new chemical or compound, either its solubility, incompatibility, dose or physiological effects, all of which the physician ought to know, but the fact of his asking the druggist shows he does not. We are supposed to know all about these new things, and how much higher we stand in the estimation of the physician if we are able to answer his questions promptly than if we could not do so. If we are able to give information asked for, where do we get our information? From the pharmaceutical journals of the day. Are they valuable to me? Yes, of inestimable value. The pharmaceutical journals which I take (I wish I could take them all) are a source of very valuable information to me. My time is all taken up with the cares of business. There are but few leisure moments (in fact, leisure in the life of the druggist is one of the things which has to be taken in small doses), but I can take time to read my journals, and look forward with a deal of pleasure to their arrival. I find the time given to their perusal well spent, and the valuable information obtained more than repays me for the time and money spent in so doing. Then take into consideration the quotations and changes in prices of druggists' goods to be found in each issue, which to a careful buyer are of great value; also the formulas, suggestions in regard to conducting business, and articles published on various subjects, all of which are of great value to the druggist. I would as soon think of conducting or trying to conduct the business of the pharmacist without a pharmacopœia, a dispensatory or other books of reference as without a pharmaceutical journal. The writer would urge upon every pharmacist, every assistant, every student, the great value of the pharmaceutical journals, and the imperative need of taking some of them; read them, and read them for information and knowledge, which will at some future time, if not at the present time, more than repay you for the time given to their perusal. In no way can you invest so small an amount and get such good and valuable returns.

* Read at the meeting of the Connecticut Pharmaceutical Association.

The Preparation and Preservation of Syrup of Ferrous Iodide.*

By E. E. Fisher, Ph.G.,

Bridgeport, Conn.

The manufacture of this syrup has probably taken as much or more of the inquiring pharmacist's time as any other. The preparation of it in careful hands has been found comparatively easy. Numerous experimenters have evolved as many different ways to its preservation in order to carry it through the heat of summer and the cold of winter—through the different shades of light, from the time it is first put on the shelf in a nice clean bottle until it is pushed back, perhaps inadvertently, to become a neglected, dust-covered bottle.

The well known proneness of this syrup to become decomposed and discolored from oxidation and the separation of free iodine induced the writer to carry out several experiments, commencing some two years ago, to determine what ingredient would best prevent this action. Numerous suggestions were followed, such as keeping a little bright iron wire in the bottle, the use of hyposulphites and other deoxidizing agents, keeping in sunlight all the time, and others, but each had its objectionable feature.

The oxidation of iron and the separation of iodine are accelerated, according to one operator, by atmospheric oxygen, when the bottle is insecurely corked; but the change can hardly be prevented by changing the syrup to air tight bottles. It is not always convenient, either, to keep it in small bottles to fit prescriptions as they are received.

A sample of the U. S. P. syrup, carefully made six months ago and kept corked, showed, on examination, some free iodine, although the color had scarcely changed.

The addition of sodium hyposulphite to a colored solution is not always to be commended on account of the fine precipitate of sulphur which is thrown down and which cannot easily be removed; still it was found to be the best means of decolorizing old syrup. The addition of glucose has always worked well in my hands, though finally discarded on account of the increased density in the finished syrup.

In following the formula given below careful attention to every detail is enjoined. Take care to have the iron nice and bright and free from rust, the sugar as high grade as possible, and to use distilled water in all the manipulations.

Then, again, with the more care the writer has taken with the preparation of the syrup, the more handsome product has resulted. In some cases, and always with this syrup, I have brought the syrup to the boiling point, shaken well with animal charcoal finely ground, and immediately filtered. This brings out a fine sparkling syrup which of itself is gratifying.

The formula follows:

I.

Iron wire	gr 246½
Iodine	gr. 820
Distilled water	℥ iij-℥ ij

II.

Sugar	℥ xvj
Glycerin	fl. ℥ iv
Hot water, q. s. or	fl. ℥ viij
Dil. hypophosphorous acid	fl. ℥ j

Prepare No. 1 as directed by the U. S. P.

With No. 2, to the 7 ounces hot water add the sugar and dissolve by heat; then add the glycerin and strain while hot as directed above, with the addition of a little charcoal.

Put 10 fluid ounces of the hot syrup into a suitable container and pour on to it the hypophosphorous acid, taking care to have it cover the surface.

When the iron iodide solution is completed, according to the directions of the U. S. P., heat it to boiling and filter, having the funnel dip below the surface of the syrup. When filtered, wash with half fluid ounce each of water and syrup heated together. Shake the whole product and add a sufficient quantity of the syrup to make the whole product measure 16 fluid ounces. Shake well and keep in flint bottles in a place accessible to daylight.

The comparison of three samples of syrup made after this formula in February, 1894, which follows, will be of interest.

For comparison I have called them Nos. 1, 2 and 3.

No. 1 was kept tightly stoppered in diffused daylight. No. 2 was kept in diffused daylight and darkness, part of the time in each place, the cork taken out occasionally and in general treated carelessly. No. 3 was kept in direct sunlight, stoppered tightly. In January, 1896, nearly two years later, they were examined with the results stated.

Each was nearly the same color, if not quite that of newly made syrup. No. 1 had a slight white precipitate, weighing about 1-16 grain in 2 fluid ounces. No. 2 was perfectly colorless, and No. 3 had a very slight precipitate similar to No. 1. The addition of test solution potass. ferricyanide to each sample produced a light blue precipitate in each instance, showing ferrous iron salt. A little of each syrup was added to some gelatinized starch, which showed no change and proved the absence of any trace of free iodine; but on the addition of a few drops of chlorine water a deep blue color was immediately produced, showing a combined iodide. To a little of each sample was added some carbon disulphide and then shaken with a few drops of chlorine water. On settling, the carbon disulphide assumed a purple color, corresponding in each case to the test as recommended by the United States Pharmacopœia. At the same time a sample of freshly made syrup was examined and the results were identical, showing no apparent difference in the syrup of nearly two years' standing.

* Read before the Connecticut Pharmaceutical Association, at the Bridgeport meeting, February 5, and specially communicated to the American Druggist.

The Most Useful Medicines.

Dr. R. A. Bindley of Harlesden, England, informs the *Lancet* that as a result of Dr. Gower's address on the use of drugs, delivered before the Willesden and District Medical Society, the Executive of the Society have decided that there shall be a discussion at a subsequent meeting on a few of the drugs considered to be most useful in general practice. Each member was asked to send in a list, and from these lists the following drugs have been selected: Iodide of potassium, antipyrin, liquor arsenicalis, tinctura digitalis and liquor strychninæ. It is a curious circumstance that none of these most useful medicines are to be found in the leading dozen most frequently prescribed medicines as determined by ourselves in 1886 and by W. Martindale in 1894. Perhaps when the discussion comes on this month the speakers may be able to explain why they do not consider the following among the most useful drugs, as they certainly are found to be most frequently ordered by prescribers. The drugs are: Tinctura nucis vomicæ, sodii bicarbonas, spiritus ammoniæ aromaticus, quininæ sulphas, vinun ipecacuanhæ, potassii bicarbonas, ammonii bicarbonas and potassium bromidum. If there is no explanation we may conclude that usefulness and popularity do not go together.

Preparing for a Board Examination.*

By Henry C. Schranck, Ph.G.,

President Wisconsin Board of Pharmacy, Milwaukee.

To my mind the board stands between the ultra-scientific professor of pharmacy and the old-time druggist who would leave matters as they were years ago, who would dub the student a druggist who has for four years more or less industriously washed bottles, attended soda fountain, made tincture from fluid extracts and dispensed ready made pills and preparations. The boards stand between two extremes, and earnestly try to elevate pharmacy and continually encourage systematic study. In this endeavor the boards are ably assisted, firstly by our pharmaceutical journals and secondly by most of our schools, colleges and institutes of pharmacy. Now what course should students pursue to pass before the Wisconsin State Board of Pharmacy? Let me say right here that the young man who has received his certificate has not obtained all, nor reached the goal of his ambition.

THE REQUIREMENTS OF THE LAW.

Simple enough. An assistant must be 18 years of age, have had two years' practical experience and have passed a satisfactory examination before the board. A licentiate must be 21 years of age and have had five years' practical experience, and passed a satisfactory examination before the board. The law is very severe on misstated or fraudulent representations, and gives the board the right to take away the certificate.

HOW THE EXAMINATION IS DIVIDED.

In order to pass a satisfactory examination the board divides its examination into three distinct parts:

1. Written
2. Recognition of specimens.
3. Oral examination and reading of prescriptions.

1. The Written Examination.—There are 30 questions; 10 each in pharmacy, materia medica and chemistry.

The questions in pharmacy relate to official, galenical preparations, giving ingredients (no proportions), *modus operandi* in making them, strength and testing (when possible) the quality. It expects the applicant to be acquainted with weights, measures, specific gravity, temperature. Describe the process of solutions, extracts, maceration, percolation, crystallization, precipitation, etc. To give examples of incompatibles, chemical and pharmaceutical, and by particular stress on dosology.

The questions in materia medica relate

* Contributed to the Wisconsin Druggists' Exchange as a guide to the examination of the Wisconsin Boards

to drugs, official name, common name, part used, habitat, medical action, constituents, official preparations, strength, doses, and antidotes if poisonous. Of alkaloids, the mode of obtaining, dose, and antidote are required. The questions also include simple and easy botanical questions.

The questions in chemistry go over the field of general inorganic chemistry, a fair knowledge of the elements, where and how found, and the mode of obtaining or preparing; symbols, formulas, equations and simple chemical reactions.

2. RECOGNITION OF SPECIMENS.—Thirty samples are given, ten of which are pure drugs, ten chemicals, and ten official preparations.

3. IN THE ORAL EXAMINATION the whole field of practical and theoretical pharmacy is gone over, as they present themselves in reading of prescriptions. Attention is paid to overdoses, incompatibles, *modus operandi* in compounding the prescription and asking such questions as would likely be asked of an applicant for a position.

The board believes in a thorough practical test of the knowledge of the applicant and is decidedly opposed to all quiz compends. We are firm believers in *practical experience* under a competent pharmacist. We are continually raising the standard and now require 60 per cent. for assistants and 75 per cent. for licentiates in the general average, and reject all who come below 45 or 60 per cent. respectively in any one examination.

HOW TO STUDY.

Do not learn answers in quiz compends by heart. MAKE *all* your preparations strictly according to the Pharmacopœia.

Take every drug, chemical, examine it carefully so that you can recognize it again. Take your text-book and read *all* about the article in question. In your manipulations follow Remington or any good work on pharmacy. supplement it with practical experiments so that your mind is firmly impressed with weights, specific gravity, filtration, percolation, etc.

AS TO BOTANY.—On your afternoon out, go into the fields from early spring to late autumn, examine plants, learn to know the technical terms, learn to analyze plants; you will soon be able to tell what natural order a plant belongs to by simply looking at it, and ere long you will be acquainted with the flora of your immediate neighborhood. If you are not delighted with your trips—then you will never be a pharmacist. *Chemistry* can be studied just like pharmacy in your workshop or laboratory. That in all studies the advice and guidance of a preceptor or fellow druggist is of the utmost importance is self-evident.

TEXT-BOOKS.

First, last and all the time the Pharmacopœia; Remington's and the National Dispensatory; Attfield's Pharmaceutical Chemistry, and Gray's Botany are sufficient.

WHO CAN PASS THE WISCONSIN BOARD?

Any one who has a common school education can, if he has a love for his profession and desires to become a true pharmacist, master the above examination easily if he devotes the leisure time of his two or five years of practical experience to study.

The object and intention of the board is to pass every one who has applied himself conscientiously to his studies, and we believe we can determine quickly whose answers were obtained by quiz compends or those who have by persistent, honest work fitted themselves to follow the responsible profession. We recognize no college, and only in exceptional cases do we grant a certificate if the candidate has passed some other board, where the requirements are similar and where an average of above 80 is shown. My own observations are that those who have passed a satisfactory examination before a board and then enter some recognized college can obtain their diploma easily and are the most sought after; they not only always command a position but are sure to receive the highest remuneration. We encourage all, even though they fail more than once, and try to impress on them that no reverses or failure should daunt their onward career; that all their actions must be governed by the one impulse and idea —the advancement of the profession of our choice.

The Toilet Water Business.*

BY H. L. GRIMES, PH.G.

The desire for luxuries seems inherent with nine-tenths of the people, especially the gentler sex, and there is nothing that goes further toward satisfying this desire than the use of some refreshing toilet water in the bath. There is a growing demand for this class of goods, and as the margin of profit is good, particularly if you make them yourself, it is to the druggist's interest to give this part of his stock more attention than it generally receives. It is necessary, of course, to keep in stock such toilet waters as are advertised and well known to your customers, but a supplemental line of your own goods will find a ready sale at such prices as you wish to establish, regardless of cutters and outside dealers.

One of the best methods of introducing a line of toilet waters of your own make is to put up samples in 1 or 2 dram homœopathic vials neatly labeled. When you wrap up a parcel of goods for a lady customer, include one of the samples, call her attention to it and ask her to kindly compare your sample with any she has used. It is also a good plan to supply the first-class barber shops in your neighborhood with liberal samples, say a 2-ounce bottle of any one water, or two 1-ounce bottles, each containing a different water. The best shops use considerable quantities of such preparations, and by a little push at the start, the druggist can supply the goods and make the profit which now goes to the barbers' supply houses

A secondary benefit to be derived from the introduction of your toilet goods to the barbers is due to the proverbial penchant the knights of the razor have for conversation, and, as one topic is as good as another about the barber chair, your goods will be likely to receive favorable comment and be recommended by the shaver almost every time he applies them to a customer's face.

To give formulæ for a complete line of toilet waters would require more time and space than are at our disposal in this article. We append formulæ for two preparations that prove popular with a discriminating trade and yield a satisfactory profit.

*The Spatula.

LAVENDER WATER.

Oil lavender flowers	2 drams
Alcohol	1 pint
Rose water	6 fl. ounces
Magnesium carbonate	½ ounce
Caramel, sufficient to color.	

Rub the oil with the magnesium carbonate, add the alcohol and rose water, then sufficient caramel to give a light brown color. Filter through paper.

We have seen lavender water that was without color except the slight shade imparted by the oil, but the color given by the caramel impresses the eye as an indication of strength in the preparation. The color may be omitted if preferred.

A superior article that takes the place of ordinary bay rum is made as follows and sold under the name

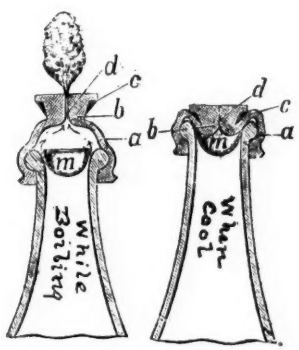
ORGEAT RUM.

Essential oil of almonds	32 drops
Extract vanilla	1 fl. ounce
Alcohol	12 fl. ounces
Water, sufficient to make 2 pints.	
Tinct. cudbear, enough to color.	

Dissolve the oil in the alcohol, add the extract vanilla, water and tincture cudbear. Shake well. If not perfectly clear, rub with a little carbonate of magnesia and filter through paper. As a rule it does not require filtration. This rum can be profitably sold at 50 cents per pint.

Bottle Stopper for Sterilization.

J. Shäfer has patented in Germany a bottle stopper, which is shown in the accompanying illustrations, for use in sterilization, which is intended to do away with the disagreeable odor which results from the contact of rubber with the milk or other liquid contents of the bottle. The stopper consists of a cap, M,



made either of tinfoil, parchment, porcelain or glass, which is laid in the mouth of the bottle in such a way that it allows of the exit of the steam which is generated in the bottle during sterilization. The exterior stopper is composed of rubber, and when the sterilized bottle begins to cool the external pressure causes the outer stopper to collapse in the shape shown in Fig. 2 and hold the inner stopper fast.

VIAU'S MOUTH WASH.

(*Pharm. Centralh.*)

Salicylic acid	1 dram
Chloroform	10 drams
Tincture of benzoin	10 drams
Tincture of cinnamon	10 drams
Alcohol (aromatic)	130 drams

NOTES ON PRACTICE.

The Edinburgh, Scotland, Chemists' Assistants' and Apprentices' Association, at the January meeting, listened to an interesting communication by William Lyon on some new methods and work. The first paper was on an

IMPROVED FORMULA FOR BLAUD'S PILLS.

The author has made a series of experiments with the view of reducing the size of Blaud's pills. The official formula is a very satisfactory one, so far as massing and keeping properties are concerned, and it has been taken as a standard during the experiments. After many trials the following formula was found to be equal to the B. P. pill in every respect and the bulk is a fifth less.

Dried potassium carbonate	30 grains
Dried iron sulphate	36 grains
Powdered sugar	15 grains
Powdered tragacanth	3 grains
Glycerin	2 minims
Syrup	10 minims or a sufficiency

By using carefully dried iron sulphate, pharmacists may rely on this formula giving a pill mass which will meet every test that can be applied to the B. P. mass. Pills made as above can be readily varnished with ethereal solution of tolu residue. Another method which gives a nice result is to moisten the surface of them in finely powdered wood charcoal and when dry varnish with tolu solution. Thus treated they have a nice glossy black appearance, and the gradual oxidation of the pill is not observed by the patient.

THE MASSING OF COMPOUND COLOCYNTH PILLS.

So much has been written about the pill at one time or another that it seems superfluous to tackle it again. This note, however, draws attention to the suitability of aromatic spirit of ammonia as a massing agent. During the summer months the author subjected it to prolonged trials, and came to the conclusion that it was far superior to any agent he had tried. After being kept for nearly six months the pitting was scarcely perceptible, a big contrast compared with the present B. P. pill. Unfortunately, however, for the adoption of sal volatile as a massing agent, the B. P. pill is very frequently prescribed along with calomel, which undergoes decomposition in the presence of a salt of ammonia, and this constitutes a strong argument against it being included in a new Pharmacopœia, and restricts its usefulness at the dispensing counter.

REACTION BETWEEN OLEATE OF MERCURY AND OINTMENT OF POTASSIUM IODIDE.

Some time ago the following prescription was handed in to be dispensed:

Hydrarg. oleatis	3 j
Ung. potass. iodid	3 vij
Misce. Sig. The ointment.	

In mixing this it assumes a bluish color, which quickly changes to dirty brown, but on standing for a day or two the color gradually disappears and it remains yellowish-white. The reaction is, of course, a well known one, but I thought it might be of some interest to the younger members of the association if a few experiments were made by way of explaining to them what takes place.

In the first place, when oleate of mercury and iodide of potassium come together double decomposition takes place, as indicated in the following equation:

$$Hg_2(C_{18}H_{33}O_2)_2 + 2KI = 2HgI + 2KC_{18}H_{33}O_2$$

If the oleate and the ointment are slowly mixed, the greenish yellow color of the mercurous iodide may be readily noticed.

In the second place, mercurous iodide in the presence of potassium iodide (and the above proportions give an excess of potassium iodide) undergoes decomposition, the double iodide of mercury and potassium being formed and mercury liberated.

$$2HgI + {}^{x}KI = Hg + KI(HgI_2) + {}^{x}KI$$

If the fat is washed out of the ointment the mercury will be found. The next reaction that takes place results in the disappearance of the mercury in the free state. Though the few experiments I have had time to carry out are not conclusive on the point, still they indicate that the final change that takes place in the ointment is probably shown in the following equation:

$$KC_{18}H_{33}O_2 + 2HC_{18}H_{33}O_2 + Hg_2 = KHg_2(C_{18}H_{33}O_2)_2 + H_2$$

When the proportions of the oleate of mercury and the ointment of iodide of potassium are altered, the reactions are gradually lessened as the proportions approach equality, thus:

II.

Hydrarg. oleat.	3 ij
Ung. potass. iodid	3 vj

On mixing it assumes a bluish color darker than the former. After a day or two yellowish-green spots are seen on its surface. On further keeping it becomes yellowish-white, darker than the former.

III.

Hydrarg. oleatis	3 iij
Ung. potass. iodid	3 v

In this case the reaction is somewhat similar to II., except that the final color is not yellowish-white, but reddish-yellow (a mixture of mercurous and mercuric iodides).

IV.

Hydrarg. oleat.	
Ung. potass. iodid	ää 3 iv

The bluish color, which is found on partially mixing, is quickly changed to bluish-green, and finally to yellowish-green (mercurous iodide). The samples shown have been kept for nearly three months.

Thyreoiodine.

While the thyroid gland in various forms has been very widely used of late years, and with excellent results, there has heretofore been but little effort made to isolate and study the active constituents of the gland. Fränkel recently advanced the theory that the active principle was not an albuminous body and that it has the formula $C_6H_{11}N_3O_3$ (*Apoth. Zeit.*, 1895, 104, 105).

Prof. G. Baumann now makes the very important communication (*Zeit für Physiolog. Chem.*) that he has isolated from the thyroid gland of the sheep a body containing a large proportion of iodine, which he has given the name of thyreiodine. In addition to the iodine phosphorus is present in the new substance. According to the *Pharmaceutische Post* the method of preparation is as follows: The glands, previously cut up fine, are boiled for several days with a 10 per cent. solution of sulphuric acid; this causes the separation of a fine flocculent precipitate, from which the active principle is obtained by repeated boiling with 85 per cent. alcohol. The residue of the alcoholic solution, after evaporation, is dissolved in soda solution and filtered, diluted sulphuric acid added and a brown amphorous substance is then precipitated, which, according to Dr. Roos, is quite as efficacious in the treatment of goitre as is the thyroid gland itself. Baumann has found iodine in this compound beyond any possibility of doubt, and has even separated the iodine from its organic combination and procured it in the free state. Baumann has also discovered small quantities of this substance in two goitres. Iodine has never been discovered before in the human body, and the discovery of such a rich deposit of iodine in a single organ of the body was totally unexpected. It appears that a specific organic compound of iodine is formed in the thyroid gland and that this enters the general organism as required from time to time. The discovery of iodine in the thyroid gland is particularly interesting, in view of the fact that iodine has always been used in the treatment of goitre, both by external application and internally.

To Prepare a Transparent Mirror.

The following process (*Neaste erf u. erf.*) for producing a mirror which reflects from one side but is transparent from the other, has been patented in Germany: Dissolve 1 part by weight of silver nitrate in 10 parts by weight of water and label No. 1. Prepare another 10 per cent. solution of silver nitrate, but in larger quantity; to this add ammonia water, drop by drop, stirring carefully until the precipitate formed at first is completely dissolved, and label No. 2. Now add solution No. 1 to solution No. 2 until the odor of ammonia is no longer recognizable and the liquid has again become very turbid. Now add 100 parts by weight of distilled water for every part of silver nitrate originally used in solution No. 2, and filter until clear. Label this No. 3. Prepare a reducing solution by dissolving 0.8 parts by weight of Rochelle salt in 384 parts by weight of distilled water, boil, and to the boiling solution add gradually a solution of 3 parts of silver nitrate in 10 parts by weight of distilled water, and filter when cool, and label No. 4. Clean the glass to be coated thoroughly, lay it on a perfectly level surface in a room at a temperature of about 25 degrees C. (77 degrees F.). Mix equal parts of No. 3 (the depositing fluid) and No. 4 (the reducing fluid) and pour over the glass. The glass may, if preferred, be dipped into the solution. The time required for the deposition of the layer of silver of just the correct thickness has to be determined by the judgment of the operator in each case, and this may be aided somewhat by observing a piece of white paper below the plate of glass. When a sufficient deposit of silver has been made, and much less is required than for an ordinary mirror, pour off the silvering liquid and rinse thoroughly with the distilled water, and stand the mirror on edge to dry; coat the silvered side with a solution of colorless shellac in alcohol and finally frame the mirror with a backing of clear glass to protect the mirror surface from being scratched. Mirrors so prepared, being transparent from one side, would be valuable in front of the prescription counter.

The Influence of Certain Medicinal Compounds on the Character of the Urine.*

By Frederick W. Haussmann, Ph.G.,

Philadelphia, Pa.

The examination of urine for abnormal ingredients, in particular albumin and sugar, involves frequently questions of considerable delicacy.

To the analyst, examining insurance cases, and to the practical physician, the presence of traces of these compounds is an important matter, and it is at times difficult to express a decided opinion upon the normal or abnormal condition of the secretion.

Normal urine possesses the property of responding feebly to a number of reactions for glucose, and the percentage of the reducing principles, estimated by the various methods as given by different authorities, is found subject to variations. The fact that Fehling's solution is reduced and other reactions for glucose respond to a greater or less degree, by urine passed after the administration of a number of internal remedies, has only received attention in recent years, and while much remains to be learned on the subject of their elimination, in many instances we are able to foretell the occurrence of such reactions.

VARIATIONS IN RESULTS.

In the composition of such urines we notice, however, peculiar variations.

A number will respond to every commonly employed reaction for glucose, some only to certain tests, while with the others entirely negative results will be obtained.

For instance, in urine passed after the administration of chloral hydrate, we have both the Moore-Heller reaction for glucose with alkaline hydrates, also the reducing action upon Fehling's solution, while to Boettger's bismuth test the urine will not respond.

Similar results are found in a number of instances.

The reducing power of such urines also varies considerably, some possessing this property feebly, while others reduce alkaline cupric tartrate solution readily, so that a suspicion of diabetes can be entertained, unless further inquiry is made.

To understand the reason for this action, so closely allied to that of glucose, it is necessary to briefly dwell upon the metamorphoses of such compounds in the human organism as far as known.

If we examine many of the remedies, after the administration of which the mentioned properties of the urine are found, it is found in most instances that their action upon glucose reagents is entirely negative. Careful research has revealed the fact that compounds are formed with glycuronic acid, a substance which has many properties in common with dextrose or ordinary grape sugar. These compounds possess a number of peculiar properties, both in chemical behavior and their action upon polarized light. In our subject, their action upon glucose reagents is of primary importance.

In normal urine a glycuronic compound is stated to exist, the indoxyl glycuronic acid, to which some of the reducing action of the secretion is due.

Again, in the examination of glycuronic urine in general, it must be remembered that other urine constituents also possess a similar action. Such are uric acid, creatinin and probably other compounds of which we possess a limited knowledge. The reduction of these compounds takes place at a higher temperature, in some only after prolonged boiling, which property may form a point of distinction from diabetic urine.

In the following statement the writer will chiefly dwell upon such urine which came under personal observation, adding a few data collected from different works on urine analysis.

CHLORAL URINE.

The peculiar action of this secretion upon glucose reagents has already been mentioned. Chloral hydrate is rarely found as such in urine, at best only in traces, and is eliminated as urochloralic acid. This compound turns polarized light to the left, a common property of glycuronic compounds, reduces Fehling's solution, has the same action upon indigosulphuric acid as glucose, but does not respond to Boettger's solution.

Material increase of the specific gravity of the secretion does not seem to take place, which forms a distinguishing feature from diabetic urine.

In the pale urine of a delirium tremens case, in which chloral was administered in large doses, the amount of Fehling's solution reduced by the eliminated urine corresponded to 0.4 per cent. of glucose.

In the light-colored specimen, with the specific gravity of 1.022, of a patient who had taken 60 grains of the drug, administered within two days, the amount of reduction corresponded to about 0.15 per cent.

This case was kept under observation, the urine being examined before and after the ingestion of chloral.

The reduction took place only during the administration of the drug.

A singular fact is that in chloral urine the Braun-Johnson picric acid and potash test do not react. This, together with the non-action of the bismuth test, is remarkable.

CROTON CHLORAL URINE.

Regarding butyl chloral urine, conflicting statements are found. According to some writers, it will reduce Fehling's solution, while according to Nebauer and Vogel, butylchloralic acid, under which form the drug is eliminated, possesses no reducing action upon cupric or other metallic oxides in alkaline solutions.

In one sample examined by the writer the reducing action found was slight, by no means as prominent as in the case of chloral urine.

CHLOROFORM URINE.

In connection with chloral urine, it may incidentally be mentioned that urine containing chloroform will also reduce Fehling's soution.

The dilstillate from a specimen of this kind reduces ammoniacal silver nitrate solution, while in the distillate from urine containing acetone no such action takes place with either reagent.

TURPENTINE URINE.

The urine voided after the administration of oil of turpentine has repeatedly been the subject of investigation. The peculiar odor communicated to the secretion by this drug has been described as resembling that of violets, although the original terebinthinate odor is frequently noticeable, especially upon the addition of mineral acids.

In examining turpentine urine for abnormal ingredients, a knowledge of the physiological action of the oil is important.

Albumin Reactions.—Turpentine urine is not infrequently found to respond readily to albumin tests. This may be due to a temporary albuminuria produced by the drug, the latter possessing the property of causing strangury and occasionally bloody urine. In such cases the presence of albumin is transient, disappearing with the suspension of the drug.

Again, so-called resin acids make their appearance in the urine after the ingestion of turpentine, also manifesting themselves upon the application of certain tests for albumin.

The amount of albumin found in such urine varies apparently with the amount of the medicine administered; but it is in some instances surprising how small a quantity of turpentine will produce a temporary albuminuria. Other factors, which are liable to cause nephritic disturbances, independent of the action of the oil, must, however, also be considered, such as febrile albuminuria or incipient Bright's disease.

A special examination was made in a case where opportunity was offered to study the effect of the drug upon the urinary secretion. The urine of the patient, before the administration of turpentine oil, had a normal specific gravity, and bore no evidence of either albumin or sugar.

Six drams of the oil were administered in 48 hours, at the end of which a specimen of the urine was examined. The same had an acid reaction, the characteristic odor, a brown-red color, and a specific gravity of 1.032.

The examination for albumin gave the following result: Albumin was found by the heat test, nitric acid and picric acid contact methods, acetic acid and potassium ferrocyanide reaction. Tanret's test, and with concentrated magnesium sulphate solution in the presence of acids (Roberts' test).

Three days after stopping the medicine the urine was again examined, the physical properties being nearly the same, the specific gravity, however, only 1.025. Traces of albumin were still found, but the reactions were more feeble.

Similar results were also obtained in the examination of other specimens of turpentine urine.

The resin acids mentioned may coexist with the albuminuria, and, upon the application of reagents may also be precipitated. Their difference from albumin is shown by their solubility in alcohol.

Physical Properties.—The color of turpentine urine is usually deep red, independent of the fact that blood may be present. The color continues some time after ceasing the administration of the oil. The specific gravity, in the writer's experience, is increased, the increase continuing for some time. The reaction is, in most cases, strongly acid.

Sugar Reactions. — Turpentine urine will also respond to the commonly employed reactions for grape sugar. This is due to terpenglycuronic acid, which has the property of redu.ing Fehling's solution.

The high specific gravity of such a specimen of urine may have the tendency to cause one to suspect a diabetic condition, although the red color of turpentine urine differs from that present in diabetes.

* Read at a pharmaceutical meeting of the Philadelphia College of Pharmacy.

The amount of oil of turpentine ingested apparently influences the reducing power of the urine. For instance, in the specimen mentioned above, the amount of Fehling's solution reduced corresponded to a glucose percentage of 0.5, while in a case where 240 minims of oil of turpentine were administered in two or three days the amount corresponded to 0.25 per cent. of glucose.

In the former specimen, after the medicine was stopped for four days, the amount of reduction corresponded to a glucose percentage only of 0.1 per cent.

Marked diminution in the specific gravity also took place in this instance.

Other Glucose Tests.—Besides reducing Fehling's solution and responding to Trommer's test, turpentine urine will also give decided glucose reactions with Boettger's and Nylander's bismuth tests and the Braun-Johnson's picric acid and caustic alkali method.

The bismuth tests respond with the same rapidity as a grape sugar solution, while the deep mahogany color of the picramine test of Braun was readily developed on boiling.

It may be stated that the two tests mentioned last cannot be relied upon in most glycuronic urines. Examination of the different specimens of turpentine urine, after removing the reducing glycuronic compound by means of basic lead acetate, showed the same to be perfectly free from glucose.

Incidentally, it may be mentioned that pure oil of turpentine, examined with various glucose reagents, showed no reducing power whatever.

OTHER REMEDIES.

In connection with the foregoing, it may be stated that a number of other remedies produce similar reactions when eliminated by the kidneys.

Copaiba and its oil behave similarly to oil of turpentine when being examined for albumin.

When examined for the latter, the urine may reveal the presence of resin acids, and the same means, their solubility in alcohol, will furnish the point of distinction.

Incidentally, it may be mentioned that, after the administration of a large dose of cubeb and its preparations, an identical result is said to take place.

It may likewise be surmised that many remedies of a balsamic nature are liable to produce this effect.

Copaiba urine will also reduce Fehling's solution, but, according to Quincke, will not affect the bismuth tests. It is readily distinguished by its characteristic odor and the red or purplish color it develops when mixed with hydrochloric or other concentrated acids.

The numerous synthetical organic compounds introduced into medicine within the last few years furnish a large field for research in urine analysis.

The elimination of a number in the urine as glycuronic compounds has been studied, but many require further investigation.

They possess the peculiarities referred to in their action upon polarized light, being all lævogyre, as well as the reducing action upon glucose reagents.

Some, however, do not reduce the mentioned test liquids. Such are phenolglycuronic and camphoglycuronic acid, eliminated after the administration of carbolic acid and camphor, and the compounds formed after the ingestion of antipyrine and other remedies.

Among a number which exert a reducing action, a few deserve prominent mention.

Such are acetanilid or antifebrin, kairin, morphine, nitrobenzol and bitter almond oil, benzoic and salicylic acids, and their respective salts, together with others of more or less importance.

ACETANILID URINE.

This deserves, perhaps, more than passing notice. Urine passed after the administration of this compound readily reduces Fehling's solution and responds to most other sugar tests.

It is usually of a red color and increased specific gravity.

To physicians such urine is of considerable interest, also to the insurance analyst, if it is considered to what extent the drug is consumed in the form of the many popular headache and neuralgia remedies.

The popular effervescent headache cures, to the baneful influence of which many are addicted, will furnish us with this source of error, as well as the nostrums, principally composed of acetanilid, which enjoy the patronage of many physicians.

Acetanalid is eliminated in the urine as para amido phenol glycuronic acid.

According to Le Nobel, Nylander's bismuth test, to which acetanilid urine responds, reacts in a similar manner to glucose, also with urine passed after the administration of kairin, tincture of eucalyptus and large doses of quinine, giving a black precipitate.

CHRYSOPHANIC ACID URINE.

Another urine which cannot be strictly classed with the glycuronic, although it possesses a number of their properties, is chrysophanic acid urine, eliminated after the administration of rhubarb and senna.

This has been considerably treated upon recently, and a number of methods have been proposed to detect this principle in urine.

The statement has been made by some writers that such urine possesses the property of reducing alkaline copper tartrate and alkaline bismuth solutions.

Physical Properties. — Chrysophanic urine is of a yellow, sometimes greenish-yellow color, gradually turning darker as the urine undergoes decomposition.

It is characterized by the red color developed with alkalies, although the urine eliminated after the administration of santonin is said to possess the same property. The red color thus produced is again changed to yellow by the subsequent addition of acids.

Outside of its similarity in color, chrysophanic urine possesses none of the characters of urine containing bile, or, perhaps, only when the precipitation method by means of alkaline earth bases is employed, when, however, other distinguishing features prevail.

Comparison with Glucose Tests.—It is questionable whether the so-called reduction of copper tartrate or alkaline bismuth solution, by means of chrysophanic acid urine, is due to the inherent property of this principle.

Such urine, no doubt, has the property of slightly reducing Fehling's solution, but the reduction is probably due to other urine constituents, perhaps glycuronic compounds.

Even chrysophanic acid, extracted from rhubarb, has a feeble reducing power upon alkaline cupric tartrate solution.

To determine this point the writer prepared chrysophanic acid from rhubarb, subjected it to the commonly employed sugar reagents, and compared with the substance commercially known as chrysophanic acid the chrysarobinum of the Pharmacopœia.

The following differences were noticed:

The acid prepared from rhubarb in a saturated aqueous solution gave, with alkalies, a purple color, while a similarly treated chrysarobin solution became deep red.

The reducing action of the former upon Fehling's solution was extremely slight, while with the latter precipitation of red cuprous oxide took place.

In the rhubarb acid, the blue of the copper solution was turned purple, with chrysarobin a red color.

Several other differing points were also observed.

In the examination of chrysophanic urine, in view of the action of alkalies upon this principle, the important fact must be considered that, with few exceptions, all tests employed for the detection of glucose take place in alkaline media.

It is therefore likely that the action of alkalies upon chrysophanic acid—namely, the red coloration—may take place in such urine.

As many glucose tests are based on similar color reactions, this may prove a source of error in examining for small quantities of glucose.

The writer subjected various samples of chrysophanic urine, both natural and artificially prepared, to a number of sugar tests to study their effect.

1. Moore Heller test (heating with alkaline hydrate solutions). — Purplish red color, differing from the brown produced in the presence of grape sugar.

2. Rubner's or O. Schmidt's test.— This consists in treating the urine with lead acetate solution, filtering, and treating the filtrate with ammonia.

A white precipitate of lead saccharate is formed, which, if glucose is present, will assume a flesh or red color on boiling.

Thus employed, this test will not be affected by chrysophanic acid urine, as the lead salt will precipitate the latter. But if the following modification is employed a different result may take place:

Three grams of lead acetate are dissolved in 10 ccm. of urine, by heat, filtered, and the still hot filtrate treated with ammonia.

On heating the mixture to boiling the above-mentioned color will be developed in the presence of glucose.

In following this method with chrysophanic acid urine, part of the acid does not seem to be completely precipitated and to pass into solution, when, upon the addition of ammonia, also a red color will be produced, as in the case of glucose.

Some care is therefore necessary in employing this test.

3. Reaction with copper solutions.— The usual method for the examination of urine for sugar consists in observing the action upon boiling diluted Fehling's solution.

If chrysophanic acid urine is added in this manner, the blue of the alkaline copper solution is turned to a reddish-brown, occasionally a purple color.

The usual reaction is the following:

Upon first addition of the urine the blue color is changed to purple, gradually turning reddish-brown upon the further addition of the urine.

The amount of the principle present influences the reaction to a considerable degree, however.

4. The bismuth tests.—Boettger's and Nylander's alkaline bismuth tests, when applied to chrysophanic urine, respond in a manner somewhat similar to glucose.

On boiling such urine with the alkaline bismuth mixture of Boettger, it assumes a purple color, while the precipitated bismuth salt will be blackish-gray.

A similar result takes place, according to Salkowski, in Nylander's modification, a blue-black precipitate being formed.

5. Sachse's solution is used for the quantitative estimation of glucose.

It consists of solution of potassium iodohydrargyrate, with a considerable excess of alkali.

The solution is reduced to metallic mercury in the presence of glucose.

For a reliable sugar test in urine it is not adapted, as this secretion is liable to reduce it when glucose is absent. In chrysophanic urines this result takes place readily, the supernatant urine after the precipitation of mercury possessing a red-brown color.

It resembles in this respect diabetic urine; due to the large excess of alkali in Sachse's solution, the sugar is sometimes caramelized, and the mixture will have a brown color.

The same results may be expected in Knapp's alkaline mercuric cyanide solution.

6. The picric acid and potash method of Braun and Johnson is also liable to produce a dark color, as with glucose, when applied to chrysophanic urine, due to the action of the alkali upon the acid.

In this test, however, no dark red color is produced unless the other reducing constituents of urine are factors also. The yellow picric acid evidently retards the formation of the deep mahogany color produced in the case of glucose. But if the urine be rich in chrysophanic acid the alkaline mixture will also turn quite dark on boiling.

Several other tests are open to the same objection—namely, the action of the alkali upon chrysophanic acid, when applied to such urine.

This may be the case, for instance, in Penzoldt's diazobenzolsulphonic acid reaction in the presence of strong alkali, the purple color produced by the latter in chrysophanic urine being liable to be mistaken for the red-blue tint produced in diabetic urine.

Source of Error in Diabetic Urine.—We have, so far, considered the liability of chrysophanic urine to be a source of error in examining healthy urine for small amounts of glucose.

But it can also interfere in diabetic urine, and, in some cases, retard the accuracy of certain tests.

In such cases it must be supposed that rhubarb or similar medicines have been administered to a diabetic patient, or one slightly suffering from glycosuria.

Some of the recently introduced tests for glucose, also acting in alkaline media, depend upon decolorization of the test liquid, the glucose present acting as reducing agent. One of these tests is Crissler's reaction with safranine. This is, for ordinary purposes, an excellent reaction, where an accurate quantitative estimation of glucose is not desired. This test is applied, according to Allen, as follows: Equal measures of urine (2 ccm.), of normal KOH or NaOH solution, and a solution of safranine, 1 part in 1,000 parts of water, are mixed.

The mixture is heated in a test tube, avoiding agitation as much as possible, till freely boiling.

If the urine contains more than 0.1 per cent. the liquid is decolorized; otherwise the red color remains intact or is only partially discharged.

If the color is destroyed the test may be repeated with twice or three times the volume of the safranine solution, which represents roughly 0.1 per cent. of sugar.

If more than four or five measures are required the urine is diabetic.

If this test is applied to a chrysophanic urine containing a small percentge of glucose complete decolorization of the mixture does not take place, due to the action of the alkaline excess upon the chrysophanic acid.

The urine must, however, contain a considerable amount of the latter, or else no material difference is noticeable.

In specimens rich therein this interfering action can be plainly observed.

Another test dependent upon decolorization is based upon the fact that potassium ferricyanide, commonly known as red prussiate of potash, in alkaline solution, is changed to ferrocyanide in the presence of glucose.

It has, however, been shown that uric acid also has the same effect.

To this may be added that, in chrysophanic urine, possibly containing sugar, no such decolorization takes place.

The excess of alkali will color such urine red, which is not destroyed even upon the subsequent addition of glucose.

The reliability of this reaction as a sugar test is therefore open to criticism.

Chrysophanic urine is stated to be eliminated after the administration of rhubarb and senna.

Even the external application of chrysarobin, according to Rosenthal, is stated to produce it in the urine.

In the experience of the writer, after the administration of large doses of cascara sagrada urine is eliminated which has properties similar to chrysophanic urine, although apparently to a less degree than that produced by rhubarb.

After large doses of aloes the urine sometimes turns darker upon the addition of alkalies, and it was found not to be due to glucose.

Perhaps similar reactions to those described may be obtained with principles which pass through the kidney and give color reaction with alkalies.

As previously mentioned, santonin is stated to possess this property, but to what extent it may influence the reagents mentioned the writer is unable to state, as, so far, he has been unable to procure a specimen of santonin urine.

SEPARATION OF CHRYSOPHANIC ACID.

It may be desirable to remove the interfering chrysophanic acid for the further examination of such urine samples. This is best effected by precipitation with basic acetate of lead solution, which, besides the acid, removes also glycuronic compounds.

Subsequent removal of the excess of lead by means of sulphuric acid, and subsequent examination in the usual manner for glucose, becomes necessary.

Animal charcoal will also remove chrysophanic acid from urine.

In presenting this paper to the meeting the writer is conscious of the fact that many of the points briefly dwelt upon are deserving of more exhaustive treatment. The object has been to call attention to an important matter which offers a field for interesting research and of which our knowledge at present is at best limited. The pharmacist can aid scientific investigation in physiological chemistry by a careful scrutiny of different prescriptions, and considering the probable elimination of the prescribed drugs.

By calling the attention of physicians, who can procure samples of urine more readily than the pharmacist, to the importance of this matter, interest can be created and much valuable information can be obtained.

If this receives careful attention and study a systematic treatise upon the elimination of drugs can be expected in a short time.

Digestive Ferments.*

By F. Casson.

The word "ferment," the author said, is derived from *fervere*, to boil, and was formerly applied to those cases in which a liquid or semi-liquid mass was seen to become puffed up and disengage gas without any appparent cause, that is—without any cause that could be understood and explained.

The meaning of the term has been much extended, until at the present day we mean by fermentation those chemical changes which take place in a substance through the agency of a body derived either from the animal or vegetable kingdom, termed a ferment. This ferment remains the same, qualitatively, both before and after the reaction. Hence we class many bodies as ferments to which the word ferment, as meaning a "boiling," is misapplied. All ferments possess three properties:

1. They are nitrogenous organic substances.
2. They are unstable—heat, acids, etc., readily destroying them.
3. A relatively small quantity is capable of producing great changes in the body acted upon, especially if the products of the change be removed.

Ferments can naturally be divided into two great classes:

THE FORMED OR ORGANIZED FERMENTS.

These have a definite organized structure, and are capable of independent growth and multiplication. They include:

(*a*) The Moulds.
(*b*) The Saccharomycetes or Yeasts.
(*c*) The Schizomycetes or Bacteria.

THE UNFORMED OR SOLUBLE FERMENTS.

These have no organized structure or power of multiplication. They include among others:

(*a* The Diastasic ferment.
(*b*) The Peptic ferment.
(*c*) The Rennet ferment.
(*d*) The Pancreatic ferments.

The action of the first class appears to be due to the presence of one or more living cells in a body; the action of the second may be traced to the molecules of which they are composed, and which are the carriers of the chemical force that causes the changes. The second classs of ferments will only be dealt with here.

DIASTASIC FERMENTATION.

The best known instance of this occurs in malt extract. If a solution of malt

*Abstracted from a paper read before the Midlands Chemists' Assistants' Association January 8.

extract be heated to about 30 degrees C. with its own weight of starch in solution, the starch is completely converted in a few minutes into maltose and dextrine, and ceases to answer the iodine reaction. The diastasic fermentation occurs to a small extent in the saliva. The diastasic body may be obtained by filtering saliva and mixing with five or six times its weight of alcohol. The very slight precipitate which falls is dried at the temperature of the air. It has a strong diastasic action.

PEPTIC FERMENTATION.

This fermentation takes place in the stomachs of animals when food is digested, and the stomachs are the sole source of pepsin.

Various theories of digestion have been advanced from time to time—that the changes were due to heat only, to grinding only, or to the action of strong acids, etc.

Gastric juice exudes when the surface of the stomach is touched. It is usually colorless and always acid in reaction. Human juice has a sp. gr. from 1.001 to 1.010, and contains less than 1 per cent. of solid matter. On boiling, it is not coagulated, but its power is totally destroyed. It may be kept for months unchanged.

The power of gastric juice in dissolving proteids may be traced to the pepsin it contains, which can only act in the presence of an acid, preferably hydrochloric.

THE PREPARATION OF PEPSIN.

The British Pharmacopœia directs that the mucus membrane of the stomach be, after washing, simply scraped off and dried. Pepsin can readily be obtained purer, and therefore stronger, than by this method Wassman dissects off the mucus membrane and treats repeatedly with water at 30 to 40 degrees C. The liquors are mixed, precipitated with lead acetate, the precipitate collected, suspended in water and sulphuretted hydrogen passed through. The filtrate is concentrated and alcohol added to precipitate pepsin.

Another method is to exhaust the stomach and mucus membrane with weak acid and saturate the solution with salt. A scum rich in pepsin rises to the surface and may be skimmed off. It is either dried and powdered at once, or mixed while still wet with sugar of milk.

Pepsin may also be obtained by digesting the membranes in glycerin, in which the pepsin is soluble, and precipitating with alcohol.

Pepsin is absolutely indiffusible through parchment paper, and advantage may be taken of this to purify it by dialysis.

THE RENNET FERMENT.

The fourth stomach of the calf has been long known for its milk curdling properties, due to a ferment termed chymosin. This ferment is invariably present in the healthy human stomach, and is present in many animals. The chymosin may be extracted from the calf's stomach with water, but a better way is to digest with weak acid for 24 hours and carefully neutralize. Aqueous solutions of salicylic acid extract the ferment well, and will keep. Alcohol precipitates the ferment in an impure form. Prolonged contact with alcohol, especially if strong, is said to destroy the ferment. Fixed caustic alkalies have a powerful destructive action upon it, even in very small quantities, and carbonate of sodium, calcined magnesia, etc., act the same, though in a lesser degree. Heat readily destroys chymosin, especially if acid.

THE FERMENTS OF THE PANCREAS.

Pancreatic juice is a more or less viscid liquid, invariably alkaline and readily putrefying. Alcohol causes an abundant precipitate, which carries down the ferments it contains. These are at least three:

(1) A proteolytic ferment acting in neutral or alkaline solutions.
(2) A diastasic ferment, similar to that in the saliva.
(3) A fat-decomposing ferment which emulsifies and decomposes fats into glycerin and fat acids.

The proteolytic ferment

TRYPSIN

does not exist in the perfectly fresh pancreas, but is formed in an hour or two's time. It may be extracted by digesting with water, precipitating with alcohol, redissolving, reprecipitating, and digesting in absolute alcohol. The precipitate is treated with water, acetic acid added, filtered, sodium hydrate added to slight alkalinity, filtered, concentrated at 40 degrees C, filtered, and precipitated with alcohol. If necessary, it is purified by dialysis.

Trypsin acts most readily in a solution containing about 1 per cent. of Na_2CO_3, that being the strength of the juice. It acts in neutral and in very slightly acid solutions, but contact with warm acid fluids gradually decomposes it.

THE DIASTASIC FERMENT

is obtained by treating the pancreas by extracting with glycerin, chloroform water, solution of borax with boracic acid, brine, etc. By these methods solutions of the two ferments are obtained, which may be precipitated by alcohol. The ferment acts most readily on starch at from 30 to 45 degrees C. One part of the diastase is said to be able to convert 40,000 parts of starch into sugar and dextrin.

THE FAT DECOMPOSING FERMENT

cannot be extracted or kept so readily as the others. If two parts of juice be agitated with one of olive oil, or of some fat melting below 40 degrees C., a perfect and persistent emulsion is formed immediately. The fat globules are said to be finer than those in milk. Both the pancreas and its juice possess the power of decomposing fats. If a particle of the pancreas be dehydrated by means of alcohol, well teased out in an ethereal solution of butter fat, and afterward transferred to a drop of tincture of litmus, a cover glass being placed above it, the litmus is seen to be reddened all around the particle, due to the action of the fat acids separated from the butter.

Eight samples of pepsin were tested by the B. P. test and the results were shown. Six answered the test, two left much albumin undissolved. Five samples tested by the U. S. P. method were shown, of which three were satisfactory.

LOTION FOR DERMATITIS.

[*Journal of Cutaneous and Genito-Urinary Diseases*].

Sulph. præcip.	℥ iss
Gum tragacanth	gr. v
Powdered camphor	gr. x
Lime water	℥ j

Kola and Kolanin.*

BY FRED. B. KILMER.

New Brunswick, N. J.

Those who can realize the thoughts of the coal-carrier who went to Newcastle, or him of Shakespeare who gilded gold dollars, colored flowers of the fields, sandpapered ice, and threw the reflection of a candle against the noon-day sun, can imagine the feelings with which I have accepted the call of your committee to read a paper before this body of pharmacal savants. In this noble institution of American pharmacy the lower classmen can attain a knowledge never reached even in the professor's chair in the school of many of us. For one denied these great privileges to attempt the discussion of a phyto-chemical subject before the faculty of this college seems highly presumptuous. To be given a topic that has been so ably handled in your journals, in the professors' chairs, and in these meetings, smacks of ridiculous excess. I shall, therefore, at the outset state that I have come to seek rather than to give information; to ask questions rather than to attempt to answer them, conceding to my auditors an ability and familiarity with the subject far greater in most respects than my own. We may note here, in retaliation against the ill-timed jests as to the slowness of Philadelphia, that the first scientific reference in this country to the kola plant, upon which I am to speak, may be found in the *American Journal of Pharmacy*, in 1865; that the first medical report in America upon its action was published in the Philadelphia *Medical Times*, in 1886. The first full clinical report was from the pen of Dr. Shoemaker of Philadelphia.

The subject assigned me is the well-worn theme, the kola plant. Its history and pharmacognosy are so familiar that we can safely pass them, except to call attention to the botanical specimen of a flowering branch, specimens of the pods, the nuts, photographs taken in the habitat of the drug, together with samples of the dried and undried fruit, all of which I present to your museum. The kola nuts, as found in our market, come mainly from Africa. The bulk of the West India nuts are consumed by the inhabitants of the islands; a very small part of the crop is shipped to Europe, commanding there a higher price than the African nuts. Lately, small supplies have reached our market from this source. No accurate estimate of the extent of the world's supply, nor the possible yield for this drug, can be given. The official reports of the African trade give from 2,500,000 to 3,000,000 pounds per year, which is mainly utilized for home consumption. Those who are familiar with tropical products can realize the difficulties and peculiarities of the market in such a commodity. It is carried on mainly through native women. There is a certain amount gathered for home demand. The quantity that will reach the shipping ports must depend upon the caprice of the natives, and especially as to how much they stand in need of rum or tobacco.

The crop must all be carried, often hundreds of miles, in head loads, through miasmatic forests, over almost impassable streams, across pathless mountains, under a tropical sun. The conditions

* Read at a pharmaceutical meeting of the Philadelphia College of Pharmacy.

are such that to gather a ton of nuts and safely land them on a ship that plies along Africa's sunny shores is a task that one would shrink from after a survey of the field. The native gatherers are shrewd dealers, even if not well skilled in the arts of civilized commerce. They know how to corner supplies, to create a rise in price, and they also know that, when a European buyer wants the nuts badly, grades that have no value at home will find a ready market. This accounts in part for the quite variable nature of market specimens.

In the West Indies the governments encourage the cultivation of the plant, and before many years ample supplies from this source will be obtainable. In our own country some attention and discussion has taken place looking toward its cultivation on our soil. Therefore the following notes, gathered from observation and from the notes taken in the botanical departments of the West India Islands, may be of interest:

NOTES ON THE CULTIVATION OF KOLA.

The kola plant seems to grow well in any climate where there is plenty of rainfall and a warm, tropical sun. Of course the hotter and more moist the climate the better. Wherever bananas, nutmegs or cacao will grow it is safe to say that this tree will thrive. The best kind of soil is that which is deep, rich and clayey, although it will grow in a great variety of soils. In some of the West India Islands it may be found as high as 5,000 feet above the sea level, but the best specimens are generally found at not over 1,000 feet elevation. If the situation is low and damp the ground must be well drained. The young plants may be obtained directly from the seed, planted in the field where they are to grow; but the best results seem to come from planting the seeds in nursery beds, transplanting them when the plants are from 2 to 3 feet in hight.

The seeds as usually obtained from growers are packed for shipment in boxes covered with earth, and the whole wet with fresh water. Holes are bored in the boxes for ventilation. The nursery beds in which they are planted are made of loam, peat or leaf mold and kept shaded. In nursery planting the seeds are put in the bamboo pots commonly used in the tropics and placed from 9 to 12 inches apart. It takes three to five weeks before the sprouts appear above ground. When ready for transplanting they are set a distance of about 25 feet apart. If the soil into which they are transplanted is not rich the best planters dig holes several feet deep, 5 feet each way around, and fill in with the topsoil.

It is necessary for the young plant to have shade. Many intelligent planters, who have lately taken up the planting of kola, use the banana for the purpose. The banana is a very rapid growing tree. It shelters the young kola plant and makes a profitable crop while the kola is coming into bearing; kola, in turn, will begin to yield by the time the banana has exhausted the soil. The bananas are planted 10, 11 or 12 feet apart, with the kola at every second banana in the direction of the line. Thus, a plot of 20 feet square is inclosed with banana trees with four kola plants at the corners, leaving the kola from 20 to 24 feet apart. In sheltered situations, as in a low valley between hills that have a growth of woods, the banana is omitted in the center of the square, to give more light and air. The gradual thinning out of the banana is made as the kola acquires increased growth.

Kola is usually planted at the beginning of the wet season. Grown wild, it commences to yield fruit about the fifth or sixth year. Well cultivated specimens often begin to bear considerably earlier. In the wild state they reach full bearing in the ninth or tenth year. When the kola tree attains full size it is customary with planters to place in the field with them small varieties of coffee or some vegetable plants such as peas or yam. Kola gives the necessary shade. The stems and leaves of the other plants furnish a good fertilizer. By this method a kola plantation costs nothing except for the first planting. Kola does not appear to exhaust the soil as does the coffee, banana, orange, etc. Upon once attaining its growth it appears to be of permanent value. Specimens that have borne for 50 years and probably longer have been noted. Independent of its value for the nuts, kola is an excellent shade and timber tree, and is utilized for this purpose. A conservative estimate of the yield is 120 pounds of dried nuts, or over 250 pounds of green nuts per tree, or from 8,000 to 10,000 pounds per acre. No such amounts, however, are gathered in any portion of the West India Islands, owing to the unsystematic and haphazard measures employed in harvesting the crop.

THE PODS AND SEEDS.

Taking up that part of the plant probably of the greatest interest, the seeds or nuts, we may examine the pods, which we will find contain from two to 12 nuts or seeds, so closely pressed together in growing as to be crowded into various shapes. The cellular tissue of the pod before drying is filled with a very slimy, stringy mucilage that is largely absorbed upon ripening. A singular fact noticed about the seeds is the fact that red and white nuts are found side by side in the same pod. So far as my observation goes, pods may be found that contain all red or all white, but no trees give all white or all red seeds.

The native users lay great stress upon the difference between the white and red kola nuts. Symbolically, the white nuts mean peace, happiness, veneration, acquiescence to overtures. The red nuts mean the reverse: war, ill-will, challenge, rejection of overtures, etc. In some instances the white seeds command the higher price, being in repute as giving greater and better effects.

In the dried nuts found in our market it is difficult to distinguish between the white and red variety. Oxidation during the drying of the seeds gives to both about the same yellow-brown color. When subjected to the action of solvents, white or red nuts (dried) yield to water, alcohol, acetone or glacial acetic acid shades of orange and yellow, which are slightly deeper with the red than with the white variety, but so nearly alike that considerable practice is necessary to distinguish between them. The coloring matter of the red nuts is, however, very soluble in dilute mineral acids. The white and red varieties may be distinguished by macerating for 24 hours in dilute sulphuric or hydrochloric acid, when it will be found that the acid extraction of the red kola is a beautiful red rose, while that of the white seeds is of a light straw color.

Heckel has shown that if the acid extraction is made alkaline with ammonia, that from red nuts assumes a purplish violet, that from white an ochre-like color. Several observers have noted that the red nuts give a larger percentage of moisture (Heckel gives 46 per cent. for white, 56 per cent. for red). The same author claims that the white seeds contain 5 per cent. more caffeine, 7 per cent. more of the peculiar principle, kolanin, than the red. My own experiments tend to confirm the observation that there is an appreciable difference in the amount of glucoside found in the white seed as against that found in the red.

ALKALOIDS.

The alkaloids so far identified as belonging to this plant are such familiar substances that any comment upon them is unnecessary. Worthy of note, however, is the fact of their close relationship to each other in chemical formula and structure. Also, that they are analogous and apparently identical with the alkaloids found in all the caffeic group of plants; that they are closely related chemically and physiologically with the xanthine bodies, which are found normally in the muscular and other tissues, such as the liver, spleen, brain substances, etc., of the animal body. These xanthine bodies are typical products of the downward destructive metabolism of proteids. Similarly, the alkaloids of this plant seem to form when the seed is on its way toward removal from the tree.

Xanthine $C_5H_4N_4O_2$.
Para-xanthine $C_7H_8N_4O_2$.
(Dimethyl-xanthine.)
Theobromine $C_7H_8N_4O_2$.
(Dimethyl-xanthine.)
Caffeine $C_8H_{10}N_4O_2$.
(Trimethyl-xanthine.)

Caffeine, as theine, was roughly identified as present in these nuts by Dr. Daniells, and confirmed by Attfield, in 1865, who gave the percentage in the samples examined as 2.13. The second alkaloid, theobromine, present in quite small quantities, was separated later. Numerous assays of the drug show greatly varying amounts of these alkaloids. A quite recent assay of the carefully prepared powder is as follows:

ASSAY OF SAMPLE OF DRIED KOLA BY WENTWORTH LASCELLES SCOTT, CHEMICAL AND MICROSCOPICAL ANALYST, LONDON.

Calculated Upon the Substance Free from Hygroscopic Moisture.

Caffeine (or theine)	3.202
Theobromine	.214
Other alkaloids	.065
Kola red and kola orange	3.874
Fatty matter	1.142
Ash	3.955

The experiments made by the writer in the habitat of the plant seem to show that these alkaloids are found chiefly in the ripe or nearly ripe seeds (except that in a very few instances the pods have given faint alkaloidal reaction). The wood, bark and leaves give entirely negative results. Experiments are now being made to determine more accurately at just what stage in the life history of the plant these bodies are first manifest. In the limited number of experiments made the results indicate that in the green nuts only traces of the free alkaloids are present and that the quantity increases materially as the nuts ripen.

KOLANIN.

Heckel and Schlagdenhauffen have set us an illustrious example in the study of drugs by devoting 12 years to the investigation of this plant. Very early in their researches, after exhausting the

alkaloids, they separated a body which seemed to them to present an analogy to cinchona red. They found it to contain an active principle which they were at first unable to separate, but which they found to be capable of giving striking physiological results.

Ernst Knebel of Steeg (in 1891), also a notable name in the history of this drug, in a long and laborious examination demonstrated that a glucosidal body was present, to which he gave the name kolanin. In his essay he gives several methods of separation, one of which is as follows: The powdered kola is first extracted with alcohol, the extract evaporated to dryness, the finely ground extract then exhausted with chloroform. When the residue is found freed from caffeine it is mixed with clean sand, washed in cold water until the washings run off slightly colored. (This washing is to remove glucose, tannin and salts.) The washed residue is dissolved in alcohol, filtered, and again evaporated. The product is substantially the *kola rouge* of Heckel. Knebel demonstrated that this glucoside upon decomposition gave caffeine, glucose and a third non-nitrogenous body (Knebel's *kola roth*). We should, therefore, remember that Knebel's kola red is a non-nitrogenous body, which, he stated, is joined in chemical union with caffeine as a component part of the glucoside kolanin.

Real *kola roth*, as Knebel terms it, is a decomposition product of the glucoside. He shows that it is closely related to the tannins, containing the same number of hydroxyl groups, and giving upon fusion with caustic potash, pyrocatechin, formic, acetic and isobutyric acids. He believes this substance is converted into tannic acid during the drying of the nuts. The work of both Heckel and Knebel, heretofore referred to, upon kolanin was conducted mainly upon the dried drug. It is quite evident, however, from the results obtained by a number of other observers that in the undried seed, especially before ripening, little or no caffeine exists as a free alkaloid. In carefully manipulated samples of the unripe nut the quantity in some instances has been found to be quite small, especially when the nuts are fresh from the tree. It has, so far, been found difficult to separate kolanin free from fat, resinous and extractive matter; the tannin and mineral constituents present in small amounts are also more or less difficult of removal. The glucosidal body itself is also given to decomposition in the manipulations used for removal. Therefore it may not be strictly correct to say the end product is absolute kolanin.*

In the process given by Knebel for the separation of kolanin even the washing with water causes some change in the glucoside. The kola rouge of Heckel and Schlagdenhauffen is really an impure glucoside, contaminated with glucose, tannin, inorganic salts and some fatty bodies.

For their product these authors have given the following properties and reactions: Freed from glucose and fixed salts by precipitation with acetate of lead and sulphuretted hydrogen it gives a deep green color with iron salts. Ammoniated citrate of iron, with an excess of ammonia, gives a blood-red coloration. Tartarized antimony gives a voluminous precipitate; gelatin, a white precipitate. A solution of nitrate of silver is reduced. The product itself is a brown-red, amorphous, bitter powder, insoluble in cold water, partly soluble in boiling water, in hot water forming a resinous, greasy ball, cooling to a shiny, hard mass. When freed from tannin its solution gives a brown precipitate with alum; with sulphate of copper a dark green precipitate. A precipitate is formed with a solution of iodine in potassium iodide. A more purified form of kolanin is soluble in boiling water, alcoholic solution of potassium hydrate and ammonia. Its alkaline solution is red-brown when cold, but becomes red on warming. Its alcohol solutions do not act upon salts of iron, but are precipitated by plumbic acetate. Upon sublimation this product gives out an empyreumatic oil and traces of caffeine. Upon boiling with dilute hydrochloric acid it is not dissolved, but partly decomposed into glucose and caffeine. As above noted, it is partly broken up by continued boiling in water, and completely by boiling in a dilute sulphuric acid, 20 per cent. strength.

Knebel, in his article, demonstrates that the glucoside, kept at a temperature of 60 to 70 degrees C. for 24 hours, is decomposed into its components, viz., caffeine, glucose and a third product, non-nitrogenous coloring matter, which he names *kola roth*. In his work he demonstrates the molecular proportions of these constituents. Kolanin is also decomposed by the action of the ferment of the kola, kolazym by the action of the ferments of the saliva and of the gastric juice.

The crude method pursued by the writer in the habitat when working upon the undried nuts was to extract the finely chopped nuts with ether, allow the ether to partly evaporate, then extract both the nut and ethereal residue with chloroform. In the chloroform extraction the caffeine was to be found in the ethereal solution of the glucoside. This process was first devised as a field expedient, where the laboratory was carried on a mule's back. Its use was afterward verified in the home laboratory. In practice it was found that ether extracted the water and the glucoside and some caffeine, but left behind some alkaloid; hence, the further extraction with chloroform was necessary. It was also found that, if the nuts were chopped under ether, alcohol or other liquid, without allowing exposure to air and drying, only a faint reaction for alkaloid would result; whereas, if the nuts were broken open and allowed to dry or partly dry, quite a crop of crystals could be separated.

In subsequent experiments it was found that all manipulations which involved the use of heat—such as allowing the nuts to partly or fully dry—cutting them open resulted in quite an increase of alkaloid crystals; also that, when great care was used, with little exposure to air, the avoidance of heat in all stages of the process, the amount of alkaloid was apparently much less. This was afterward confirmed when, in attempting to separate the glucoside, it was found that processes involving heat and exposure to air provoked the breaking up of the glucoside.

From the processes outlined by both Heckel and Knebel we can readily see that several methods of operation will give the body termed kolanin. For instance, if a solid extract (or an evaporated fluid) be exhausted of caffeine by the aid of chloroform, then washed with cold water to remove such extractive matters as may be soluble, there will remain the kolanin in an impure state. If, in his process, after the exhaustion of the extract with chloroform, the residue is extracted with ether, the kolanin, in a somewhat pure state, will be taken up in the ether and may be separated by evaporation. After the chloroform is exhausted I have found it good practice to wash first with petroleum ether to remove some fatty bodies not removed by chloroform, then to follow with the ether extraction. If in all these operations the solvents and washing liquids are kept faintly acid, there is, seemingly, less decomposition of the glucoside and formation of the tannic-like matters.

FERMENTS.

It has been proven that there is present in this nut an unorganized ferment, to which the name kolazym has been applied. This body appears to possess manifold powers (possibly there is more than one ferment present). Kolazym is a glucosidal enzyme, having the power to split up the glucoside kolanin into glucose, caffeine, and a tannin-like body. It is also a carbohydrate enzyme, giving quite active diastasic action upon starch. It seems to be active in faintly acid solutions, but will act in neutral and feebly alkaline media, acting best at a temperature of about 54 to 65 degrees C. Extreme cold, as well as boiling, seems to destroy its powers. It may be quite readily separated from the undried nuts by macerating the chopped tissue in glycerin and water, made faintly acid, then pouring the glycerin extraction upon dilute alcohol. A fine, cloudy precipitate of proteid matter will be thrown out of the solution, carrying with it the ferment. The precipitate may be further purified by redissolving in water and glycerin, and reprecipitation as before, with final washing in absolute alcohol. Its most active state seems to be in this freshly precipitated and moist condition. Drying over calcium chloride or sulphuric acid seems to inhibit it. Drying by heat almost wholly destroys its power. The separated ferment will convert soluble starch into dextrine bodies and sugar. It will decompose kolanin into its constituents, glucose, caffeine and kola red. The exact nature and office of plant ferments are somewhat obscure. Prof. J. R. Greene, London, gives as an explanation the fact that in constructive processes of plant life an excess of material is formed over and above that immediately utilized; that this excess is temporarily deposited in the tissues, nutritive material of various kinds being found in different regions of the plant. When the constructive process is at rest the action of the ferment is called forth, and the reserve food is made ready for assimilation by a process of digestion, in which the ferments are active factors. Under this view, kolazym may be said to act upon the reserve food stored in the seed. During the resting stage of the seed it starts the digestion of food for the future plant.

In the kola nut some of the products of this metabolism are the alkaloids caffeine and theobromine; similarly, a product of the metabolism of meat are the closely related xanthine bodies. We

* I am also of the opinion that in the processes in common use for the assay of kola, kolanin is not entirely broken up, and therefore the whole of the alkaloidal content of the drug is not revealed in the result. Prof. A. R. L. Dohme is of the opinion, however, that, in the process outlined by him at one of these meetings the glucoside is entirely decomposed. I have suggested to him that he continue his investigations, and have sent him samples of both the dried and undried drug for the purpose.

find in the ripened seed glucose, which shows the ferment has been at work. It has been stated that in the germinating stage more caffeine is present than when the seeds were first taken from the tree. Professor Greene claims that the glucoside bodies and their ferments which act upon them are deposited in different cells.

PHARMACOLOGICAL NOTES.

An apology may be due from the pharmacist when he enters the domain of pharmacology, but in my judgment the work of the pharmacist does not end with his chemical assay. To verify or nullify his conclusions the action of any drug in question upon animal economy must be determined (quite apart and distinct from their action in disease). Under our present methods of drug investigation this work is left largely in the hands of the medical practitioners, but, of necessity, does not belong there. Not all practitioners of medicine are fully competent to reach proper conclusions in this field, and those who are competent are too busy to carry out any extended researches. If all that were known about the host of new and old drugs was expressed in a table of their chemical constituents, what information would this knowledge convey as to their value in medicine? If kola were an entirely new drug; if its alkaloids, caffeine and theobromine, its glucoside kolanin, were entirely known, should the pharmacist be content to rest on its assay and say to the physician, I find in this drug one glucosidal body and two free alkaloids; the alkaloids are so similar, chemically, that it is difficult to tell them apart, but here's the value of this drug expressed in chemical symbols? Is this all that pharmacy can do for medicine?

Before a drug can be given a place in therapeutics somebody must first accurately determine its physiological action. The proper value of a drug in medicine will largely depend upon the exhibition of its constituents in their most active condition. The pharmacist must know the physiological action as well as the chemical nature, else how can he make an eligible preparation? The study of any drug is pharmaceutically incomplete until this is done, and without such a study medicine cannot apply it in therapeutics. It seems to me, therefore, that pharmacology lies well within the domain of pharmaceutical chemistry. Modern science teaches us that drugs having differing chemical affinities differ in their effects upon the body, while those belonging to the same chemical groups are allied in their action. By altering their chemical composition the place of their action and effect is changed. The chemical constitution of a substance has an important bearing upon the part of the organism which it will affect, so that, in the evolution of science and the application of drugs, medicine must invade pharmaceutical chemistry, or else pharmacy must absorb pharmacology.

We may rightly abhor and eschew counter prescribing and pharmaceutical therapeutics, but it seems reasonable that the study of the action of drugs, apart from their therapy, is a fitting field for the pharmacist. With these thoughts, let us briefly review the pharmacology of the drug before us. By chemical assay we have separated two alkaloids, caffeine and theobromine. As found in the plant, they are so closely combined as to be difficult of separation. Physiologically, their action seems to materially differ from a simple mixture of the same two alkaloids in equivalent proportions.

From a chemical point of view we have expressed the value of this drug on its alkaloidal contents, irrespective of all other constituents. Is this the correct and the total value? Is morphine the full measure of the value of opium, cocaine of coca, quinine of cinchona, atropine of belladonna? Is the measure of a drug summed up even by its total alkaloidal contents? Pharmacology would answer no. The alkaloids separate from the drug, while presenting actions that resemble those of the drug itself, by no means replace or fully represent it. A statement by Prof. John U. Lloyd in respect to belladonna may stand for all drugs containing alkaloids:

"Neither a solution of atropine nor of the salts of atropine or hyoscamine in proportion to correspond to those obtained from the alcoholic extract or tincture of belladonna, seems to possess the full qualities of the alcoholic extract or a percolate of good belladonna. Hence, admixtures of extractive with the purified alkaloids cannot fully replace natural belladonna extractives that are of the same alkaloidal proportions.

"For this reason phyto-chemical analysis does not altgogether determine the comparative therapeutic value or physiological energies of belladonna preparations, or that such as are deficient in alkaloid are correspondingly inferior."

In the drug under consideration an assay* from various authorities shows, besides the alkaloids named, 16 other substances set apart and named. Some of these groups include a still larger number of separate constituents. Are these constituents no factor in the influence of the drug upon the organism? The physiological action of the drug, as reported by a host of observers, is far different from that of caffeine or any drug of the caffeine group. One record of observations, showing its influence upon muscular contractions, shows that caffeine acts upon the hight of the contraction. The action of caffeine increases these, but the effect is of short duration, the amplitude being very restricted. The muscle is exhausted as rapidly, even more so than in the normal state. The drug kola acts upon the number and intensity of the contractions. The duration of the contractions is greater, the amplitude is larger and longer sustained. The decrease which follows is in a very regular progression. (DuBoise.)

Dr. H. Marie has shown, by a series of comparative tracings, that with caffeine the starting contractions are very elevating, but there is a sudden fall reaching below the starting point; while with kola there is a gradual elevation, which is continued until the drug begins to lose its influence, when the descent is very regular and gradual to the normal point. It is characteristic of caffeine and of other stimulating drugs that there is a depressing action, but there is none with kola. This has been verified by Drs. Smith and Leuf, who, in connection with Dr. Woodbury, recently made some interesting studies of this drug.

*Caffeine	2.348
Theobromine	0.023
Kolanin	1.290
Fat	0.734
Essential oil	0.081
Resin	1.012
Tannin	1.591
Glucose	2.875
Saccharose	0.612
Mucilage	3.040
Starch	30.990
Dextrine	2.130
Soluble salts	0.070
Ash	3.325
Albuminoids	6.325
Coloring	2.561
Moisture	10.117
Cellulose, etc	30.876
	100.000

A series of sphygmograph tracings made by them show an undoubted increase of the pulse and heart action, with no reaction thereafter. Thus we can see that the free alkaloids by no means account for the full value of the drug. The action of the other constituents, save one or two, has been barely touched upon. The essential oil has been defined as a tonic of the generative organs.

Whatever action or influences lie in the substances grouped under the head of resinous matter and fatty bodies, etc., at present are unknown. In the light of pharmacology one constituent, however, seems to be far superior in power and action to that of the other alkaloids, and gives the drug its place and rank. It is the substance termed kolanin. Observers have reported that this substance separated from the drug (containing, of course, no free alkaloids) "in very small amounts, increases the intensity and duration of the muscular contractions." The amplitude of the contractions is preserved longer than with the drug itself. The conservation of the muscular energy is in marked contrast with that of the alkaloids separated from the drug, exercising a well-defined action peculiar to itself.

Dr. Edouard Heckel strongly reiterates and produces a vast amount of testimony as to the marked difference and superiority between the action of kolanin and that of the free alkaloids from the drug, and of the other substances of this class. Several other observations made recently in this country show a very marked action of this drug after exhaustion of all the free alkaloids. But, so far, all our studies upon this plant and those of its class have given but a feeble light upon their whole nature. There are still formidable difficulties to surmount before we can say we have reached the ultimate truth.

From a chemical point of view the three presumable ultimates separated seem to carry in part the energy of the original plant. Of these three, two are alkaloids, of which we can sum up our knowledge by saying they are very closely related, yet they are very different. We do not know as to their origin, are not agreed as to when they begin to form, cannot tell how far the life and death processes within the plant or how greatly the chemical reactions in our test tubes have had to do with their formation, their increase or decrease in amount. When we have separated these two alkaloid bodies and given a chemical measure to the drug there remains in our apparently worthless residue one substance at least, which has been named kolanin, to which pharmacology assigns a higher value than to all the rest. Chemistry can only by hard work partly pull it to pieces. It has not yet fully decided as to its final products.*

Then we have the ferment body kolazym. Authorities sum up our present

* In manipulating the tannin-like compound of Knebel it is extremely difficult to readily effect a complete separation of the alkaloids. They are either very adherent or form slowly during the breaking down of the original substances, so that, at times, even after hours, extending into days of extraction, faint reactions of caffeine are observed.

knowledge of this class of substances by saying: "Chemically, we know nothing of them, except that an apparently small and immeasurable quantity may affect the constitution of a large quantity of certain other chemical compounds. Their action seems to be the breaking up of large molecules with which they come in contact with smaller molecules." The most that we can say of kolazym is that it is present in the plant and can define its apparent powers.

Among the many problems that arise may we not rightly ask that if by any means we could gain full control of this plant in its manifold stages of life, could we so direct its course that it might go on at our command producing the peculiar glucosidal body kolanin, could we so govern the action of this ferment as to compel the continuous production of glucose, caffeine and other products? Are conditions possible whereby the yield of glucosides and consequent alkaloids could be increased? Could we here secure a perpetual fountain of chemical products? At present we dare not even attempt a penetration into the depth of the dead or the vitalized plant as to the compounds we have grouped in our assay as "matters." We may, therefore, turn from our chemical research to the pharmacist's ever-ready crucible, his trained and trusted senses. Take an undried seed of our sterculia plant, prick through its skin coating or break it open. Mark the result. In a space of time that is not measurable, the color of the flesh within the tissue assumes an orange brown color rapidly extending over the whole abrasion. It goes on until the whole structure assumes this hue. What are those wondrous transformations that take place before our eyes? Is it not reasonable to assume that if our assay had been made before the tissue had been broken, it would have given different results than if made a few seconds afterward? In this little act have we not in some way loosened the dormant chemic life stored within and made its operations visible?

Who can measure the infinitesimal energies evolved? By the prick of a pin we have started a chemical factory in motion, have involved reactions, equations so great that the scientific mind cannot calculate them.

Bite off a piece of the nut and chew it. At first the taste is bitter and acrid; under the grinding and mastication this changes to a sweet. The tongue and palate reason out glucose without the aid of Fehling's solution. Swallow the juice or the masticated substance, put your finger upon the pulse or heart, measure the beats and their force. They are stronger and more regular.

Measure the contractions of muscular energy, try their vigor and test their power of endurance. The intensity and force is amplified. The brain, nerve and muscle have received an impetus and derived power from the energy stored within a little nutshell. Is it because the plant contains the essence of energy or the alkaloid of power?

Can we not more truly say that there is a definite chemical affinity between the several molecules of its constituent compounds and the molecules of the nerve organism, with stimulation and vigor as links in the chain? The native users of this plant endowed it with miraculous powers. An Arabian physician, a few centuries ago, named it the "tree of heaven."

To-day, the medical and lay journals of Europe and America tell a story of a "wonderful tropical nut," "a marvelous drug from Africa." This somewhat crudely indicates our exact knowledge concerning it. A distinguished American botanist recently described this plant as, to him, the most fascinating and mysterious specimen of Nature's handiwork. A professor in one of our pharmacy colleges says that he dimly sees within and through its mysterious processes the key to all our alkaloid-bearing plants. When the door shall be wide opened and all is made plain the influence and value of the discovery to science and medicine, he believes, will be so great that it may be counted with the "proin" of Berzelius, the "dawn of the day."

The Alkaloids of Anagyris Fœtida.

A very valuable paper on these alkaloids appears in the current number of the *Apotheker Zeitung*, by the well-known chemist, Dr. Partheil, in conjunction with L. Spasski. The author points out that under the name "Anagyrinum hydrobromicum," a preparation is on the markets, which is extracted from the seeds of *Anagyris fœtida*. Several references to this poison can be found in chemical literature. Cornevin states that the seeds owe their toxicity to a body identical with the active principle of laburnum, cytisine. The same statement is found in the *Reale-encyclopedia of Pharmacy*. Reale claimed to have extracted from the seeds by a very tedious method, an alkaloid of the composition $C_{11}H_{14}NO_2$. Two years ago Hardy and Gallois offered a notice on anagyrine. They extracted the coarsely powdered seeds with cold water, precipitated the extract with acetate of lead, removed excess of lead by means of H_2S, and precipitated the concentrated filtrate with $CgCl_2$. The mercury precipitate was then decomposed with H_2S and the filtrate evaporated to a small bulb, rendered alkaline with K_2CO_3, and extracted with chloroform. The base itself formed a yellow amorphous mass, which yielded a crystalline hydrochloride.

From the analyses of the hydrochloride, gold salt, and platinum salt, the formula $C_{14}H_{18}N_2O_2$ was deduced. A physiological investigation of the base was undertaken by Bochefontaine and Gley. Partheil and Spasski have now investigated the commercial anagyrine hydrobromide, and have come to the conclusion that the body is not a pure substance. They state that it contains one alkaloid identical with cytisine, and a second for which the name anagyrine is retained. Whether any other alkaloids exist in the seeds or not remains to be proved. To extract the alkaloids from the seeds they extract the coarsely powdered seeds in a percolator with alcohol (60 per cent.) acidulated with acetic acid. From the resulting extract the alcohol was distilled and the residue diluted with water, and the separated resinous and fatty matter filtered off. The filtrate was precipitated with lead acetate, rendered alkaline and extracted with chloroform. After recovering the chloroform the crude alkaloids remained as a brownish oil, without tendency to crystallize.

For the separation of the bases, the hydrochloric solution was treated with mercuric chloride, and the resulting double salt filtered off and washed with solution of $HgCl_2$. The precipitate was decomposed with H_2S, and excess of the gas driven off. This liquid served for the preparation of anagyrine. The filtrate from the anagyrine mercuric salt was freed from mercury by means of H_2S, and the solution rendered alkaline with KOH, and extracted with chloroform. This solvent deposited the cytisine in fine crystals. The base was identical with cytisine from other sources, yielding the characteristic reaction with ferric chloride and H_2O_2. The melting point was 152 to 153 degrees. The aqueous solution was lævorotatory $[\alpha]d = -120.5$ degrees. The gold salt prepared from the base agrees in its general properties and its melting point 212 to 213 degrees with cytisine gold chlorides. Analyses yielded the following results:

Found (gold).
1) 37.07 per cent., 37.19 per cent.

calculated for $C_{11}H_{14}N_2O,HAuCl$
37.11 per cent.

Examination of the platinum salt also confirmed the identity. The very characteristic cytisined-tartrate was also prepared. For the preparation of anagyrine, the platinum double salt was prepared from the solution above referred to. The anagyrine platinum chloride is only very slightly soluble in cold water. It separates in orange-red tablets. Analyses gave the following results: $H_2O = 4.05$ per cent.; Pt = 29.41 and 29.47 per cent. The following results were also obtained in nine analyses:

	1	2	3	4	5
C.....	—	—	—	—	26.57
H.....	—	—	—	—	3.70
Pt.....	28.44	28.26	28.46	28.56	—
N.....	—	—	—	—	—
Cl.....	—	—	—	—	—

	6	7	8	9	Hardy and Gallois.
C.....	26.38	—	—	—	25.48
H.....	3.57	—	—	—	3.95
Pt.....	—	28.47	—	—	29.55
N.....	—	—	4.06	—	4.43
Cl.....	—	--	—	31.15	31.03

In anagyrine hydrochloride 11.35 per cent. of Cl was found, against 12.04 per cent. by Hardy and Gallois. The gold salt yielded the following results:

	Partheil and Spasski.	Hardy and Gallois.
Au.....	33.93, 33.80, 33.61	33.79
Cl.....	24.42	24.50

A portion of the platinum salt was decomposed with H_2S, and the filtrate rendered alkaline and extracted with chloroform. The free base did not appear to crystallize, but remained as a yellowish varnish. Reale's formula, $C_{11}H_{14}NO_2$ is obviously incorrect. All the experiments support Hardy and Gallois formula, $C_{14}H_{18}N_2O_2$ more closely, but a doubt exists as to its correctness. The authors refrain, however, from putting forward any alternative formula at present. The conclusions, therefore, to which these researches bring the author are:

1. Cytisine is contained in anagyris seeds.
2. Anagyrine also occurs in the seeds.
3. Anagyrine yields the characteristic Moer's reaction, hitherto looked upon as peculiar to cytisine.

To Prevent the Caking of Table Salt.

A recent patent claims that by adding to salt glycerin, or a mixture of glycerin and cotton seed oil, in the proportion of 10 ounces of glycerin to 125 pounds of salt, or 2 to 3 ounces of glycerin and 2 to 3 ounces of cotton seed oil, the caking of the table salt is entirely prevented.

The New Photography.

Professor Roentgen's discovery of the applicability of the rays from a Crookes tube to the production of photographs, which was mentioned editorially in our last issue, has aroused the most profound interest throughout the scientific world, and through the courtesy of the *Journal* of this city we are enabled to present herewith drawings of the first photographs ever taken by this process in America. It is, in one sense, an error to speak of them as *photo*graphs, as photo means light, and light, as heretofore understood, plays no part in their production. It also differs from an ordinary photograph in that no lens is used.

PHOTOGRAPH OF THE HAND WITH ROENTGEN RAYS.

This shows the bones through the flesh of a human hand, and only hints at the possibilities of the marvelous process. It was made with imperfect apparatus, but is pronounced a success by scientists Our engraving is from a photograph by Campbell Swinton of London, reproduced here through the courtesy of *The Iron Age*.

Prof. John Trowbridge of Harvard University thus describes the method by which he produced the photograph, a drawing of which we show herewith:

The next experiment that I tried was an endeavor to obtain a photograph of the bones of the human hand. I placed a sensitive plate in a wooden box, and, having brought the box near a Crookes tube, opposite the cathode, I placed my hand between the cathode and the wooden box, so that the rays should pass through my hand before they reached the sensitive film in the wooden box. I exposed he plate to the rays for a minute and a half, and on development perceived an image of the hand with the principal lines of the bones, the knuckles and the phlanges. A clear and distinct representation of the bones was obtained down to the middle of the palm. Careful inspection of the negative showed considerable detail, although the entire picture was somewhat of the nature of a shadow picture. A longer exposure would doubtless have given more detail; but I was afraid that the Crookes tube would not stand the powerful current which I was obliged to use.

PROFESSOR TROWBRIDGE'S APPARATUS.

The apparatus which Professor Trowbridge employed was essentially a Tesla coil. The current from the street service ordinarily used for lighting the building was led into the laboratory, and was then transformed from 1,000 voltage to 60 volts. It was then, by means of what is called a step-up transformer, exalted to perhaps 50,000 volts. This would produce a powerful spark, by means of Leyden jars, of perhaps an inch. This spark was formed between the poles of a horseshoe magnet, and was blown out by means of this magnet. The current which excited the spark was then transformed by means of a Tesla coil to still higher voltage, and a Crookes tube was placed between the terminals of the Telsa coil. Several types of Crookes tubes were employed.

The most satisfactory form consisted of a spherical bulb inclosing an aluminum plate which served for the cathode, and which sent forth the parallel bundle of cathode rays. The Crookes tubes in which the cathode is of the form of a concave aluminum mirror, bringing the cathode rays to a focus on the walls of the vessel, he did not find so satisfactory as the tube just described. In the former the cathode rays proceeded from a flat plate of aluminum in a parallel bundle of rays. "It was evident to my mind," said Professor Trowbridge, "that the Crookes tubes which we now employ to produce these effects are very inadequate; that they are not designed to stand the sufficiently powerful excitation in order to get the best effects from the cathode rays.

With the Tesla coil it was unsafe to excite the tubes longer than a minute on account of the great heat developed. If a tube could be constructed of largest size, with a large sheet of, say 14 inches square of aluminum for the cathode, and a window of aluminum to allow the bundle of parallel rays to pass out unimpeded, as they now are by the glass, much better results, I think could be obtained. All the forms of Crookes tubes now in general use have cathode terminals that are small, comparatively speaking. The rays emanate, therefore, from what may be considered almost a point, and throw diffused shadows, much like those cast by a candle, whereas, if they passed out from a large surface in a parallel bundle of rays, one might expect to have much more sharply defined images.

PROFESSOR WRIGHT'S EXPERIMENTS.

We also present, through the courtesy of the *Journal*, a drawing of a plate made by Prof. A. W. Wright, Professor of Experimental Physics at Yale University.

Professor Wright's experiments were made with a great variety of substances, and it was found that strong impressions were obtained upon a photographic plate even when it was inclosed in an opaque wrapping of black paper and covered with a pine board ½ inch thick between the rays and the plate. He was successful in obtaining distinct impressions of a number of American coins—silver, copper and nickel—showing almost complete interception of the rays; but there were differences, the copper coins transmitting more than the nickel and the nickel more than the silver.

It may be said with regard to the pictures produced on the sensitive plates by these experiments that they have to the eye an appearance similar to those of shadows thrown by the object upon a surface when the source of light is but a short distance away. If the object is at a short interval from the illuminated surface the image is somewhat enlarged, also distorted if the rays fall obliquely, and the edges somewhat blurred or diffused. If the distance of the tube is increased or the interposed opaque layer is thinner so that the object experimented upon is brought quite near to the sensitive plate, then the outline of the pic-

ture is more sharp and clear and the proportions are more nearly normal. In Professor Wright's first successful experiment, instead of a photographic plate, a piece of sensitive bromide paper was used simply wrapped in stout black paper absolutely opaque, on which the objects were laid, consisting of a pair of scissors, a lead pencil, and a quarter of a dollar. These objects left a strong impression, with remarkably clear outlines of their exact forms.

PROFESSOR PUPIN'S MODIFICATION OF THE APPARATUS.

Professr Pupin of Columbia College has found it possible to replace the Crookes tube with a glass tube from which the air had been exhausted like the Crookes tube, but which was entirely without electrodes or metallic terminals inside the tube, whereas the types employed by Professor Roentgen and other experimenters have thus far been of the kind known as Crookes tubes and provided with metallic electrodes. The tube was less than 15 inches long and not more than 2 or 3 inches in diameter, and was placed in a horizontal position on a long case which served the purposes of a table. A shallow box or holder, containing the sensitive plate, was placed on edge at one side of and parallel with the tube, and at a distance of only 5 or 6 inches from it. The objects which were photographed were placed between the tube and the holder, standing, in fact, on end and leaning against the holder, the cover of which was of ebonite, or hard rubber.

THE ELECTRICAL APPLIANCES USED BY PROFESSOR PUPIN.

The electrical appliances used by Professor Pupin in connection with the vacuum tube also deserve a brief description. Off in one corner of the room was a dynamo which developed an alternating current. The voltage of this current was too high for the safety of one of the instruments through which it was made to pass, and hence it was reduced to 50 volts with a small "stepdown" transformer. The current next went into a Ruhmkorff coil, which is really a powerful "stepup" transformer and raised the voltage to 3,000, and finally was led to a big Leyden jar. This reservoir was charged and instantly discharged itself with every alternation of the current, which was at the rate of 350 a second. The discharge occurred through a supplementary circuit, and in taking place caused a rapid succession of sparks to leap across an air gap between two brass knobs.

THE DISRUPTIVE DISCHARGE.

This is called a "disruptive discharge," because the current has to burst through a non conducting material, but Mr. Tesla several years ago recommended its use in certain cases because of a new set of vibrations, of fabulous frequency, obtained thereby. Each time a spark breaks across the thin insulating barrier at the knobs, a rapid but short succession of waves is excited, fully a million, perhaps many millions a second. The branch circuit in which these oscillations were provoked by Dr. Pupin was made to include another "stepup" transformer, whereby the potential or pressure was raised to 50,000 or 60,000 volts. Thence by the wires the current was conducted to the vacuum tube.

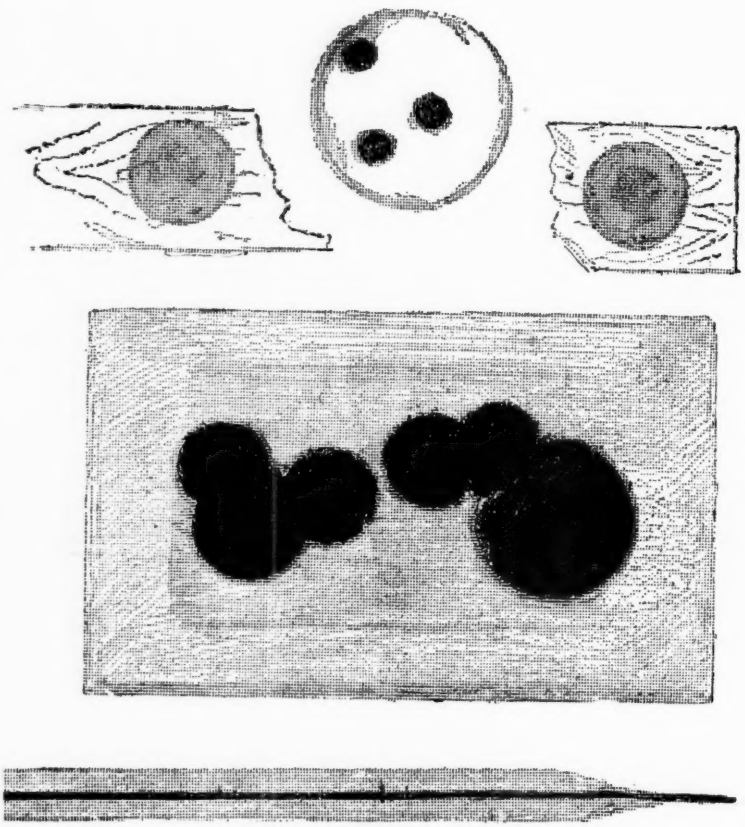
The apparatus thus arranged was left for exposure for something like two hours, and when the plate inclosed in the holder was developed it was found to bear a very distinct image of the two objects resting against the outside of the case. The key and corkscrew were made of a metal which has been found to be opaque to the X rays. They consequently caused a distinct shadow to appear on the plate.

Professor Roentgen.

Professor Roentgen is of Dutch birth, and his full name is Wilhelm Conrad Roentgen. He studied in Zurich, where he issued a monograph on the way to establish the relations as to the warmth that exists in atmospheric air. When Professor Kundt left Zurich for Wuerzburg his favorite disciple, Roentgen, followed, and later again to Strasburg University, where Kundt and Roentgen held the same positions as professor and assistant. In 1873 he taught at Strasburg; in 1875 he became professor of mathematics and physics in Wuertemburg at the Agricultural Academy of Hohenheim. But 1876 saw him back in Strasburg at the university, and in 1879 he became professor and director of the University Institute for Physics at Giessen.

He has been at Wuerzburg University since 1888. He has written various works, such as a method to fix the isothermal surfaces of crystals, and on the use of the ice calorimeter to determine the intensity of sunlight. Then he turned to electricity, and studied the figures produced in dust by electrical discharges as Professor Kundt showed them and the curious phenomena shown by electricity passing through various gases. The absorption of ordinary heat rays by steam and gases generally occupied him also.

Many other studies in physics may be put to his account; a new aneroid barometer to tell the weight of the atmosphere is his invention. In acoustics he studied the sounds emitted when gases are intermittently lighted up.



PROFESSOR WRIGHT'S PHOTOGRAPHS.

These show coins taken through three thicknesses of leather in a sealskin pocket book, the lead in a pencil, three metal balls through a pasteboard box, and two dimes through an inch of wood. This print reprodues the effect of the print from the negative, the less permeable substances showing dark.

(Made by Professor A. W. Wright of Yale for and reproduced by permission of the New York *Journal*.)

BAY RUM.

[*Die Seifen, Oel, und Fettindustrie.*]

Oil of bergamot	30 gm.
Oil of orange	2 gm.
Oil of allspice	2 gm.
Rum	20 kg.
Water	2 kg.
Borax	10 gm.

Allow to stand several days and then filter.

QUERIES AND ANSWERS

We shall be glad, in this department, to respond to calls for information bearing on pharmacy or any of its allied topics, and cordially invite our friends to make use of this column.

When sending for the formula of any unusual compound, the query should be accompanied with information regarding the locality in which it is used, its uses, and reputed effect. When it can conveniently be done, a specimen of the labels used on packages of the compound should also be sent.

Aluminum Solders.—Dr. G.—Your request for information on the subject of aluminum solders was referred to the well-known metallurgist, H. W. Edwards, who has favored us with the following reply:

The whole subject of aluminum solders is most chaotic and unsatisfactory. There are dozens upon dozens of formulæ, each one alleged by its inventor to be the only practicable solder, while as soon as any one commits a few of the published formulæ to print, other solder men who keep their particular mixture a secret, immediately express their derision. It is therefore with some hesitation that I approach this subject.

I ought to begin by a few general remarks for the guidance of your correspondent on aluminum solders in general.

The principal difficulties are: 1, the obstinate resistance of aluminum to "wetting" by the more fusible metals; this accounts for the solder not running between and attaching itself to the surfaces to be united; 2, the difficulty, or impossibility rather, of using a hot soldering "iron" to pick up and spread the solder; the usual method is to heat the work and to place a few grains of the solder round the joint (previously clamped or wired into position), then to work the solder into the joint as much as possible with suitably shaped rods of aluminum.

Roughly speaking, there are two methods. One consists in coating the surface to be soldered with tin, or copper, or a tin-zinc-bismuth mixture, and then uniting the surfaces so coated with ordinary tinman's solder, used in the ordinary way with ordinary tools. What little work I have done with aluminum I have soldered in this manner. I prefer to coat the surfaces with copper by dipping them into a solution of copper sulphate and connecting with a weak current of electricity—say 3 or 4 volts. In this manner I have always had satisfaction. The other method seeks to apply the solder direct to the aluminum surfaces to be joined, which are first thoroughly cleansed by washing in caustic alkali, or cyanide, and then thoroughly washing off in water and drying. The work is then clamped into the position it is to take when united and the junction is heated with an alcohol lamp. Solder is placed around the joint and heat continued until the solder melts. Most of the aluminum solders change suddenly from the solid to the fluid state. The solder is spread and guided into and around the joint with aluminum soldering "irons."

The following is a list of the solders proposed and more or less in use. It will be perceived that they cover a very wide range of proportions of but few ingredients, and it would seem that almost any haphazard mixture would fill the bill. Copper, because of its color, must be used only sparingly:

ALUMINUM SOLDERS.

Aluminum.	Zinc.	Copper.	Tin.	Bismuth.
20	80			
15	85			
12	88			
8	92			
6	94			
12	80	8		
9	85	6		
7	88	5		
6	90	4		
4	94	2		
30	50	20		
20	65	15		
20	30	10	60	10
			95	5
			97	3
Lead			98	2
165	9		100	

In selecting ingredients for an aluminum solder it is essential that they be free from iron, since insignificant quantities of this impurity have a very deleterious effect on the fusibility and adhesion of the resulting alloy. In fusing aluminum care should be taken not to heat it to any considerable degree above its fusion point.

Book on Wine Essences.—I. B. F.—The only book we know of that treats of the preparation of wine essences, liquors, etc., and gives formulas, etc., etc., is Brevan's "Manufacture of Liquors and Preserves." It is published in New York by Munn & Co., and can be obtained through any bookseller.

The Home Study of Pharmacy.—C. E. B.—The system of home study of the National Institute has many admirable features and fills a useful purpose. It was never intended, however, to stand in the place of a college course providing for practical work under the personal supervision of the teacher. We do not know of any other system of home study which quite equals that of the National Institute in thoroughness, but its certificate of proficiency has little if any standing and its chief end is to equip young men for the examinations of the State Boards. Address the National Institute of Pharmacy, 358 Dearborn street, Chicago.

To Deodorize Benzine.—S. N.—A process which has given satisfaction consists of mixing the benzine with bleaching powder (calx chlorata), then adding hydrochloric acid and agitating thoroughly, so as to bring the chlorine gas liberated into contact with the benzine. Now treat the decantated benzine with freshly calcined lime until all ordor of chlorine has disappeared.

To Deodorize Wood Alcohol.—G. E.—It is practically impossible to deprive wood alcohol of its characteristic odor by any simple process not involving a change in its chemical constitution. The objectionable odor of wood alcohol can be corrected to some extent by treating it with caustic soda and potassium permanganate and subsequent distillation. One ounce of the soda to every gallon of alcohol will be found sufficient. After standing a few days with occasional agitation, it is distilled in a water bath or pharmaceutical still. The first portions of the distillate are returned to the still, and this is continued until the odor of the liquid is changed. The alcohol is then redistilled with potassium permanganate in the proportion of about 1 dram to the gallon. Finally filter through animal charcoal.

Hair Restorers.—G. L.—If you mean by "hair restorer," a preparation that will supply nutriment to the roots of the hair and stimulate its growth, the following will probably be found to answer your purpose.

QUININE HAIR WASH.

Quinine	℈j
Tinct cantharides	fl. ʒ iij
Ammonia water	fl. ʒ iss
Cologne	fl. ʒ ij
Glycerin	fl. ʒ iij
Borax	ʒ ij
Bay rum, to make	Oj

Mix and filter.

If desired the above may be colored with a solution of caramel.

CASTOR OIL HAIR WASH.

Tinct. cantharides	fl. ʒ iv
Ammonia water	fl. ʒ iv
Castor oil	fl. ʒ iv
Oil bergamot	fl. ʒ j
Alcohol, enough to make	Oj

Mix.

HAIR TONIC.

Castor oil	fl. ʒ iv
Tinct. cantharides	fl. ʒ iv
Tannic acid	gr. xxx
Oil citronella	Mxxx
Oil bergamot	Mxxx
Oil cloves	Mxl
Oil lavender flowers	fl. ʒ j
Oil rosemary	fl. ʒ j
Alcohol	fl. ʒ xij

Mix.

Palatable Castor Oil.—B. R.—A very pleasant emulsion of castor oil may be prepared as follows:

Powdered acacia	ʒ iv
Castor oil	fl. ʒ j
Elixir of saccharin	Mxx
Oil almonds, bitter	Mj
Oil cloves	Mij
Distilled water, to make	fl. ʒ ij

Dissolve the gum in sufficient water and add the oil gradually; lastly add the flavoring.

Glycosin, saccharin and dulcin are all soluble to some extent in castor oil and are serviceable for imparting a sweet and pleasant flavor, masking to some extent, the disagreeable taste of the oil.

American Shaving Creams.—R. J. B. writes: "We are putting up a shaving cream, and it is not so good as some other creams on the market. Will you kindly quote a few formulas for an article of this description?

The following are fair types of the shaving creams commonly in use:

ALMOND CREAM.

White wax	1 dram
Spermaceti	1 dram
Almond oil	1 dram
Best white soap	2 ounces
Eau de cologne, a sufficiency.	

The three first ingredients are melted together and beaten into a paste with the soap and perfume.

ROSE CREAM.

Oil bitter almonds	1 drop
Oil rose geranium	5 drops
Tincture benzoin (simple)	1 dram
Almond oil	½ ounce
Cacao butter	½ ounce
Castile soap	1 ounce
Rose water	4 ounces
Glycerin, a sufficiency.	

Digest the soap with the rose water on a water bath until dissolved, and add, previously melted, the cacao butter and oil of almonds. While still warm, incorporate the tincture and essential oils with sufficient glycerin to give a proper consistency.

TRANSPARENT SHAVING CREAM.

	Ounces.
Potass. carbonate	¼
Spermaceti	½
Glycerin	1
Almond oil	2
Curd soap	3
Distilled water	16
Perfume as desired.	

Cut the soap into shreds, and dissolve it into 14 ounces of the water by aid of a water bath; dissolve the spermaceti in the oil and while warm mix with the glycerin, potash and the remainder of the water. Place in a warm mortar and gradually incorporate the warm soap solution, triturating until a smooth paste is formed. Add the perfume at the last.

BUSINESS HINTS

Advertising Aid, how, when, and where to Advertise.

PRACTICAL HINTS AND SUGGESTIONS. CRITICISM AND CONSTRUCTION OF ADVERTISEMENTS.

In Charge of Ulysses G. Manning.

The department editor will be pleased to criticise any advertisements submitted and to suggest improvements. Questions answered and advice given. Our readers are cordially invited to avail themselves of this help.

ADVERTISING FOR QUICK RESULTS.

THE druggist who is anxious to see direct returns from his advertising must make up his mind to sell at very close prices once in a while—it may be at a loss. In this business there are just two kinds of ads. that may bring marked returns: First, those relating to your specialties or other articles of which you have exclusive control. Second, ads. that appeal to the pocketbook.

PRICES. As a rule, druggists are as afraid of prices as Satan is of holy water. I find that the suggestion that figures must be given often creates consternation. "There are no cut prices here," says the druggist, "the most friendly feeling exists between the stores, and to give prices would cause trouble." But it needn't. Leave patent medicines alone, use a little native shrewdness and no harm can result. Advertisers, great and small, are forever talking *about* prices, claiming that they can save the customer money, and so on. Such claims are worth little unless you occasionally back them up with prices. Why not? Prices are definite things. They give the information the customer has to have sooner or later. People like to know just what a thing will cost them before they go to the store. Not knowing, they may stay away. Put prices into every ad. you can. It is not necessary that they should be extremely low ones always. Regular prices answer just as well many times. When a dealer habitually quotes prices the public assumes that they are low or they would not be given.

People appreciate the moral courage of a man who has fixed prices and who is not afraid to name them. What does it matter if all your competitors sell at the price you quote, as long as they say nothing about it? Three-fourths of the readers of your ad. will draw conclusions favorable to you. It pays, however, to offer really close prices at short intervals. There are plenty of things in a general drug stock that can be used for this purpose without arousing the spleen of your touchy competitor. Cigars and tobacco are good because so generally used. If a lot of cigars show a tendency to stay with you, it is better to do some advertising with them than to allow them to crumble to dust under the counter. Suppose you lose a little money once in a while. Charge it to advertising. If it gains you one or two permanent customers it will be money well spent. Soaps, brushes and other articles out of your sundry stock can be made effective leaders. Buy something occasionally with a view to employing it in this manner.

If you sell an article very close it is usually better not to say so. Quote your price and tell what the goods will cost elsewhere. It is just as well to let people infer that this is your regular price. In selling sundries describe them in the minutest manner. Tell everything that customers would or should want to know about them and clinch this description with the price.

SPECIALTIES. I believe that all druggists should have a line of specialties, for their advertising value if nothing else. In this you have an advantage over all other lines of business. The druggist who cannot create a good local demand for a preparation of his own has a poor preparation or is a mighty poor advertiser. You have every advantage over the foreign advertiser who at long range forces the sale of his goods. Successfully advertise your specialties and you bring people to your store that you could not otherwise reach. If their coming does not benefit your general trade there is something the matter with the store.

Make your line of remedies or special preparations with their advertising value in mind. Make them as good as you can, give a liberal amount for the price and always guarantee them. If it's a cough remedy be diligent during the cough season. Change your ads. as often as you can and never use the same one twice. Take up one point at a time and drive it home as forcibly as you can. Keep the guarantee prominent. If you advertise a specialty and let the ad. run over a week you are your own worst enemy. If your preparation amounts to anything you have material for a dozen ads. A dozen points emphasized in a dozen ads. give your advertising a cumulative effect that would be entirely lost if you relied on a single ad. If you appear to have a great deal to tell about your remedy you are bound to make people believe that it has value.

Tell of the chief characteristics of your remedy, how long made, size of bottle

harmless nature, guarantee, amount sold, what customers say. Give local testimonials if possible. Talk of coughs and colds, their dangers, what they lead to, proper treatment, necessity of having a good remedy in the house, children's coughs, throat troubles, etc. Any of the above points and scores of others might be made the subjects of different ads. Keep the price and guarantee prominent. If the ads. are well written and a campaign of this kind does not bring results you can safely conclude that something is the matter. The size of the ad., the position or the medium may be at fault.

Criticism and Comment.

ADVERTISING PAPERS.

I have received from Fred. Mitchell of Norwich, N. Y., a late copy of his little publication, "Druglets." Dr. J. F. Davison, proprietor of the Mattison avenue pharmacy, Asbury Park, N. J., sends the first issue of "The Pharmacy," an eight-page production of unusual excellence. Quencer's Pharmacy, Ninth avenue and Fifty-seventh street, New York City, submits an eight-page illustrated paper bearing the heading "Points from Quencer's Pharmacy."

We're Glad You Like Our Way Of Doing Glasswork.

It must be that we have a "knack" of doing it better and different than others. If you have any broken window panes at your house, now's the time to have them fixed. Send your sash to US, we've an expert glazier, who'll set the glass quicker and cheaper than you can.

Mitchell's.

Does Baby Talk Yet?

Can't you understand that he don't want you to use that old rag to wash him with? Of course he don't, he wants one of those fine silk sponges that we have, that sell for 25 or 35 cents.

Mitchell's.

REPRODUCED FROM FRED. MITCHELL'S DRUGLETS.

Of the three, Mr. Davison's production is the most ambitious and in some respects the best. It is handsomely printed on good paper, contains several original half tone illustrations and the matter is timely and excellent. This one was the holiday issue and devoted largely to the lines suitable for presents. Also contained talks on hot soda, cigars, cough remedy and other specialties. Chinked in here and there were bright little items that helped to enliven the pages. A number of them are given here.

SNAP SHOTS FROM DR. DAVISON'S PAPER.

We make prices to fit the times—and we give a good fit.

Hot Chocolate takes the keen edge off the cold days.

In selling cigars, our motto is "a cigar to swear by, not to swear at."

The Prescription Department is the real business end of every drug store.

One bottle of our Corn Slayer costs 15 cents and slays 15 corns. That is cheap enough in the hardest of times.

A good tooth brush is hard to get. Every one that we sell at 20, 30, 40 cents we guarantee, and our guaantee is good.

Our Corn Slayer certainly does slay corns. It is not as quick as lightning, but it's safer. Fifteen cents.

Many dealers sell "Postillion" cigars three for a quarter and make money. We sell five for a quarter and make friends.

We have a hair brush for 25 cents that is a wonder. All bristles, and you can't wear it out in a year. Then we have other hair brushes that are miracles. Cost from $2 to $3, and you can't wear 'em out in a lifetime.

I see nothing to criticise in this paper. Congratulations will be due if the publisher can maintain in subsequent issues.

A Seasonable And Reliable Friend For These Cold Nights Is

One of our HOT WATER BAGS. Now is the time to buy one, because it may save a severe sickness, to have one ready in case of sudden chills or colds. Heat cures many pains and this is the best way to apply it. Sizes 1 to 4 quarts, Prices, 50 cents to $3 each.

Mitchell's.

REPRODUCED FROM FRED. MITCHELL'S DRUGLETS.

the uniform excellence already attained. About half the space in Mr. Davison's paper was let to other advertisers. The returns from this no doubt covered most of the cost of the publication. This feature may afford a suggestion for those who have the enterprise to get out something of the kind but who have to consider the expense. The ads. of a few non-competing merchants may help the interest and standing of your publication and will not detract from your own ads. a particle.

* * *

The excellent features of Mr. Mitchell's "Druglets" have already been mentioned in this department. His late issue is up to the standard. Some little ads. from it are reproduced on this page.

Mr. Mitchell informs me that his paper is carefully distributed by carrier, placed in mail boxes and handed in at the doors. It is sent by mail to country people.

COMIC MATTER IN DRUG PAPERS.

Mr. Quencer's paper is, I judge, one of those that can be bought partially printed. The miscellaneous matter it contains is on the comic order, the illustrations being of the *Puck* and *Judge* variety. This paper also contains some outside advertising. Mr. Quencer's own ads are good; one of them is reproduced here.

He asks that his publication be criticised. My criticism is a general one and largely theoretical. I doubt the advisability of anything comic in connection with drug advertising. A little touch of genuine humor now and then may do, but the drug business is a serious, dignified one and the advertising should correspond.

Again, it is largely the women who read these papers; they are the chief readers of ads. of all kinds. They do over half the buying and influence the buying of the men. Women are woefully deficient in sense of humor. I never knew a woman to buy a comic paper in my life, though perhaps many do. I know from observation that the sight of a man stumbling over a coal hod, falling two flights of stairs and bringing up at the bottom in a confused jumble of man, coal hod and misplaced biblical words, does not awaken the same emotion in a woman that it does in a man. Women doubtless miss much by not being always able to see the funny side of things, but we have to take them as they are.

This ad. was accompanied by a cut of a man hailing a hack:

STOP THAT HACK.

and be quick about it, or it will get beyond hailing distance. Hacks don't move at a snail's pace; neither do coughs; they move right along, and every moment they're traveling at your cost. It may cost you your health to delay, and possibly your life. That's altogether too large a price to pay for the empty privilege of procrastination. Don't wait for the cough, but stop the hack the very first moment of its appearance by the use of our best Cherry and Tar Cough Remedy. A remedy for the people, low in price, but always effective. 19 cents per bottle, and your money back if you want it.

QUENCER'S PHARMACY.

I notice that Mr. Quencer quotes his Cod Liver Oil Emulsion at 45, 49 and 50 cents a bottle. Little errors of the kind sometimes count.

* * *

DON'T CROWD YOUR ADS.

D. S. Carpenter, Middletown Springs, Vt., submits a card advertising Grip Syrup. Your border is too heavy for so small and crowded an ad. The effect will be striking if you will use headlines about three times as large as those now employed and allow ⅛ inch of white space all around between ad. and border.

Written for the American Druggist and Pharmaceutical Record.

Ten Business Maxims.

By R. J. Hardy.

1. Keep the best of everything on hand and don't forget to tell the people so on every possible occasion.
2. Let all your dealings with your customers be held strictly confidential on your part.
3. Stay in your store and attend to customers personally as much as possible.
4. Label everything and let everything that goes out of your store carry your name on it.
5. Don't criticise a doctor's prescription in the hearing of your customers.
6. Treat all your customers with equal courtesy.
7. Keep a little of everything in your line in stock and don't be out of staple articles.
8. Turn out your prescriptions scrupulously neat, label and bottle exactly clean and wrapped neatly in good paper.
9. Don't stock up with patent medicine simply because the agent offers to advertise them under your name.
10. Don't allow loafing in your store

NEWS OF THE FORTNIGHT.

Enforcing the Law.

In Brooklyn a determined effort is to be made to enforce the pharmacy and poison laws. Here, as elsewhere, the only people who obey the law are the pharmacists. Mr. Cameron wishes to ascertain whether grocers and department stores are not amenable to the law as well as druggists (p. 99). In Chicago the first move of the Pharmacy Board has met with a check, the indictments against the druggists having been quashed (p. 150).

In Ohio it is the Food and Dairy Commission which is stirring things up. We devote much space (p. 106) to the matter, and give a number of interviews on the subject.

In Michigan the pharmacists have been having trouble through the enforcement of the local option laws, but a judge in Charlotte has rendered a decision (p. 107) which will prevent their being subjected to needless annoyance on baseless charges, and to the espionage of hired liquor spies.

The Massachusetts Law.

The Massachusetts Board of Pharmacy have presented an amended pharmacy act to the Legislature of that State. As reported in our news columns, the amendments have met with some opposition from the druggists of the State, but there seems every probability of their ultimate passage. The new act requires biennial registration, with a registration fee of $1, and incidentally gives the board power to revoke liquor licenses for cause.

Associations.

The Connecticut Pharmaceutical Association held the first of the annual association meetings for this year in Bridgeport, and we present (p. 100 to 105) a very full account of the proceedings. The amount of interest taken in the association by the pharmacists of the State serves to make the meeting an object lesson which it might be well for the pharmacists from some of the larger States to give their careful study.

NEW YORK CITY.

F. S. Hubbard, C. W. Snow of Syracuse were in the city a fortnight since.

W. F. Walch will be placed in charge of the new pharmacy about to be opened at Ardsley, N. Y.

Prof. Wm. P. De Forest of 397 Classon avenue, Brooklyn, is having the front of his store repainted.

W. B. Blanding, of Blanding & Blanding, Providence, R. I., was in the city on a short business trip.

The Himrod Mfg. Company have removed from 191 Fulton street, to more convenient quarters at 14 Vesey street.

H. J. Maris of J. M. Maris & Co., Philadelphia and New York, visited their New York house recently.

A. M. Hance, of Hance, Brothers & White, spent a few days in New York last week

Geo. Taylor of Taylor Bros., the well-known thermometer manufacturers of Rochester, spent some days in this city recently.

J. Murry Taylor of Cambridge, Mass., paid a flying visit to Philadelphia and New York in the latter part of last month.

W. B. Keller, the well-known pharmaceutical writer of Baltimore, paid a short visit to this city recently looking after some of the varied interests in his charge.

J. A. Sangston of the New York office of the Low Art Tile Company, made a flying trip to Philadelphia recently on business.

Peter Lance, the well known traveling representative of Wm. R. Warner & Co., was seen in the New York drug market last week.

Herbert Best, vice-president of the D. H. Fonda Drug Company, Albany, N. Y., has retired from the active management of the business

Henry Miles of the firm of Leeming, Miles & Co., Montreal, has been elected a member of the Executive Council of the Montreal Board of Trade.

Victor Koechl & Co. is the name of the newly organized corporation who will conduct the business of Schulze Berge & Koechl.

Charles Henry, formerly with C. G. Bacon & Co., is now traveling in the interest of the Mattson Rubber Company, giving most of his attention to the city trade.

F. L. Upjohn, resident partner of the Upjohn Pill & Granule Company, left recently for a Western tour. He will go as far as Denver and will probably be out of the city for about a month.

Charles Black of the class of '87 P. C. P., who has been with Caswell Massey & Co. for some years is now connected with the New York office of the Low Art Tile Company.

"Billy" Ungerer, the well-known essential oil expert, has just returned from a successful trip West. This is his first venture on the road, and will undoubtedly produce good results.

L. Ambos, class of '93, N. Y. C. P., has given up his position with Herman Graeser, at 40 Stanton street, and his place will be taken by Wm. Broesler, N. Y. C. P. '95.

A new drug firm have been formed under the name of Byrnes & Feltus, at Natchez, Miss. They will do a retail and wholesale business. The firm succeed R. L. Byrnes. G. M. Feltus was formerly of Bayou Goula, La.

Frank R. McDermott, the popular treasurer of the Drug Trade Club, has gone to Chicago to establish a branch office of the Nichols Chemical Company, which is made necessary by their increasing business.

Following the excellent example set by the New York College of Pharmacy, the Brooklyn College of Pharmacy has had a bill introduced into the New York Legislature authorizing the college to confer the degree of Doctor of Pharmacy.

F. W. Kinsman, Jr., who was only recently reported as having purchased the drug store of L. Sautter in Grand street Brooklyn, E. D., has resold the place to Mr. Otto Alexander, formerly of Alexander & Van Der Smissen.

R. P. Domschke, one of Williams, Davis, Brooks & Co.'s clever New York salesmen, was one of the unfortunates who suffered from the recent severe cold spell. He was confined to bed for several days with a severe bronchial affection.

Dr. Smiley, Reeder Bros.' genial and erudite prescription clerk, is back at his post again after a three days' siege of illness. His conservatism was shown in his making the trip to Boston to get the advice of his old physician.

Dr. C. W. Braeutigan has moved his pharmacy from 197 Wykoff avenue, Brooklyn, to the opposite corner, bearing the number 199. The new store has been most attractively furnished with new fixtures and has been tastefully decorated. The genial proprietor will be able to take the best of care of his constantly increasing patronage.

Dr. Fred Hoffmann, formerly of the *Pharmaceutische Rundschau*, has been elected an honorary member of the Philadelphia College of Pharmacy. Dr. Hoffmann was to have sailed for Europe about a month ago, but difficulties in the way of disposing of his house and property interfered with his plans, and it may be some time yet before he will leave.

A. H. Rogers of Rogers & Pyatt, New York, appeared before the Commissioner of Internal Revenue at Washington last Tuesday and submitted on behalf of the Legislation Committee of the National Wholesale Druggists' Association a very clear and forcible brief of the case of the manufacturers who have applied for a

rebate on alcohol consumed in the arts under the Hoar free alcohol measure.

One of the new ornaments of Lehn & Fink's office is a frame of handsome specimens of all of the narcotic plants—belladonna, henbane, digitalis, conium and aconite. The plants are complete, consisting of leaf, root, flower, and in some instances fruit. They were framed by Mr. Fink himself on a white background, and attract considerable attention.

The marriage of John Francis Queeny of Merck & Co. to Miss Olga Monsanto of Hoboken, N. J., took place at St. Paul's Church, in that city, Wednesday evening, February 5, at 8.30 o'clock. Admission to the church was by card only. The groom is well-known throughout the United States in the drug trade, and we feel sure will receive the congratulations of his wide circle of friends on his entry into the ranks of the benedicts.

The M. J. Deane plaster factory, at Yonkers, was destroyed by fire on January 31. The works of the Plaster Company were entirely destroyed, involving a loss of $30,000 on building and machinery, upon which there was an insurance of but $5000. The fire is supposed to have originated from spontaneous combustion, for it was discovered where cotton was stored.

Thos. F. Main, ex-president of the National Wholesale Druggists' Association, was in attendance at the hearing before the Commissioner of Internal Revenue at Washington, and this coupled with his attendance at the funeral of the late George Bliss, made it impossible for him to attend the banquet of the Connecticut Pharmaceutical Association. Mr. Main is an honored member of the association and he rarely misses a meeting. He was there in time for the final session on Wednesday afternoon.

The business management of the *Alumni Journal* of the New York College of Pharmacy, is now in the hands of Thomas M. Davies, who is in business with his father at 543 Third avenue. Mr. Davies has proved his capacity as a worker in the Alumni Association and he is Hospital Steward of the Eighth Battalion, N. G., S. N. Y. The *Journal* should prosper under his management and the able guidance of Fred. Hohenthal who is its new editor

The Hegeman Company of 196 Broadway are preparing a big surprise for their patrons. They will close up on Washington's Birthday, the 22d inst., and when they reopen, on the 24th inst., not only will the interior of the establishment be found to have undergone a number of alterations and improvements, but the place will contain a soda water fountain that will prove to be one of the sights of Broadway. The old fountain will be entirely done away with, and the new one, from Matthews', will extend from floor to ceiling. It will be of marble mosaic, with large mirrors, and will be the handsomest and best fountain, so far as convenience for filling and drawing are concerned, that the Matthews have ever put up.

Mr. Parmele Takes a Vacation.

Charles Roome Parmele, the widely known proprietor of Arsenauro Mercauro and the other pharmaceutical combinations of the rare metals, has sought a brief respite from business cares in a winter trip to the South. He left New York for New Orleans on the 7th inst., and will enjoy the duck shooting of the neighboring waters. Mr. Parmele's health has not been of the best of late, sickness in the family and the strain incident to the removal of his extensive plant to 36 Platt street, all telling on him severely. His many friends unite in wishing him a pleasant trip, big bags of game and speedy restoration to his usual vigorous condition.

A Tour through Europe.

Rudolph Leonhard, who will be remembered by a host of friends as the former apothecary to the Vanderbilt Clinic, has just returned home after an extended tour through Europe. The story of his wanderings through France, Germany, Spain, Italy, Austria, Egypt, Greece and the Holy Land would afford fine material for a tale of travel and adventure, and we regret our columns do not lend themselves to this style of narrative. Mr. Leonhard is a graduate of the College of Pharmacy of the City of New York, and some 18 months of his stay in Europe was spent at Munich, in Bavaria, under Professor Buchner, studying the chemistry of beeswax and modern bleaching methods. Mr. Leonhard s father is the proprietor of an extensive wax bleaching establishment near Paterson, N. J., and his son's work in the chemistry of the waxes is likely to be felt soon in improved qualities of beeswax, if that is possible.

Marriage of Mr. Good.

Brent Good, whom every wholesale druggist in the United States, and almost every retailer, too, knows as the president of the Carter Medicine Company of New York, was married on the 29th ult. His bride is Miss Frances Colfax Colwell of Brooklyn. Owing to illness in Miss Colwell's family, the wedding was a very simple one, only the near relatives of the contracting parties being present. Mr. Good's best man was his son, Harry Hoyt Good, and his daughter, Miss Kate Hamilton Good was the bridesmaid.

Immediately after the ceremony Mr. and Mrs. Good sailed on the Trinidad for Bermuda, where the honeymoon will be spent. They expect to return about March 1.

John M. Peters Leaves the Fraser Tablet Company.

The Fraser Triturate Mfg. Company of this city have been reorganized and John M. Peters, who has been treasurer and general manager for a number of years past, is no longer an officer of the firm. He has completely resigned his connection with the firm and is now to be found at 71 William street, in the offices of the *Oil, Paint and Drug Reporter* and *Painter's Magazine*. The Fraser Triturate Mfg. Company removed their laboratories and workshops to Brooklyn a short time ago, a change necessitated by the demands of a constantly increasing business.

When Mr. Fraser was seen by a reporter for the AMERICAN DRUGGIST he was asked his views as to the future of the tablet triturate and compressed tablet.

"We did a larger business last year than in any previous year, and the capacity of our new factory in Brooklyn, which has only been in running order for a few weeks, is taxed to its full capacity." "But," said our reporter, "we see constant mention in the pharmaceutical press of the decline of the tablet triturate." "Well, the best answer I can give to that is to extend an invitation to you to visit us at our factory. Just step over and see Mr. Hays at the factory, you will get in this way a better idea of the popularity of the tablet triturate and the demand for goods of this class than by any statement I may make."

The State Board.

The New York State Board of Pharmacy hold its next meeting for the examination of applicants for registration on February 28, at Albany, Plattsburg, Rochester, Syracuse and Yonkers. The experience of the board has been that the increase in the examination fee has not reduced the size of classes, as anticipated by some. Secretary E. S. Dawson thinks that the provision adopted by the board increasing the size of the examination fee is much better than the proposed idea of reregistration.

War on Muslin Druggists in Brooklyn.

Donald L. Cameron, president of the Kings County Board of Pharmacy, has been personally inspecting the drug and grocery stores of Brooklyn to ascertain the extent to which the pharmacy and poison laws were transgressed. Mr. Cameron found a complete disregard of the laws on the part of grocers. He laid the matter before Superintendent of Police McKelvey and called his attention to the law in the case. The result was the following order issued to police captains by Superintendent McKelvey:

I am informed that grocers and other unauthorized persons are selling drugs in violation of law. Grocers in the new wards especially are having drugs on sale. You will therefore strictly enforce, to wit:

AN ACT GOVERING THE SALE OF DRUGS AND POISONS IN THE COUNTY OF KINGS, STATE OF NEW YORK.

(Chapter 502, Laws of 1879, as amended; chapter 272, Laws of 1886; passed June 12, 1879.)

SECTION 1. It shall be unlawful from and after the first day of October, one thousand eight hundred and seventy nine, for any person, unless a registered pharmacist or registered assistant pharmacist within the meaning of this act, to open or conduct any pharmacy or store for retailing, dispensing or compounding medicines or poisons, or for any one not a registered pharmacist or registered assistant pharmacist to prepare physicians' prescriptions, expect under the immediate supervision of a registered pharmacist or registered assistant pharmacist, in the county of Kings.

Mr. Cameron says that the Board of Pharmacy is going to pay especial attention to the dry goods stores. When he was elected chairman of the board he decided that it should take a more active part in suppressing the sale of drugs in these stores. It is well-known that many persons were violating the law, but as the officers of the board were not paid for their work they were somewhat indifferent. Mr. Cameron proposes to see that the law is enforced.

Connecticut Pharmacists.

Annual Meeting of the State Association—Bridgeport Pharmacists Banquet the Members—Speeches at the Banquet—A Physician's Tribute to Pharmacists—Dr. George L. Porter on the Status of the Pharmacist—A Lawyer Complains of a Lack of Reciprocity—Pharmacists the Least Litigious of any Class—Work of the Pharmaceutical Press—Details of Business Meetings—Efforts for the Elevation of Pharmacy—Important Papers Read—A Notable Gathering.

The members of other associations of organized pharmacists throughout the country who are accustomed to meet in annual convention under the most favorable weather auspices, and who make enjoyable summer outings of their gatherings, will learn with surprise that the Connecticut Pharmaceutical Association has for 20 years past met in the most inclement season of the year, early in advance of the time selected by the vast majority of sister associations, and with no inducements to attract attendance beyond the discussion of matters pertaining to the protection of their interests and the elevation of their calling. Connecticut pharmacists thus evidently recognize that there is more to seek for in organization than the mere social enjoyment which it affords. It can be seen in the earnestness of their deliberations that they realize that by presenting a united front and being steadfastly pledged to work for the higher interests of the profession, more can be accomplished for the welfare of the craft than is possible in any other way. One of the important results of the meeting just closed will be the introduction into the State legislature of a bill to appropriate money for the detection and prosecution of unlicensed dealers in drugs and medicines. This is an effort in the direction of restricting the sale of all medicinal compounds to licensed druggists.

THE twentieth annual meeting of the Connecticut Pharmaceutical Association opened at the Atlantic Hotel, Bridgeport, on Tuesday evening, February 4. The convention was called to order by President Charles A. Rapelye of Hartford, at 8.30 p.m. After announcing the absence, through illness, of Frederick Wilcox, the veteran secretary of the association, he announced the following list of applications for membership:

NEW MEMBERS.

Jos. A. Hays, Theodore Eggleston, New Haven; Frank E. Ballard, Chas. Le Sauer, Alexander E. Kaesmann, Geo. A. Haux, Henry L. Benze, Frank J. Ostrofsky, Wm. Joseph Duncan, Bridgeport; Crayton F. Carpenter, Wm. P. Russel, Andrew A. McCallum, Waterbury; Harrison C. Purdy, Shelton; E. R. La Place, Salisbury; Clarence Dougal, Torrington.

The applicants named were all elected at a subsequent session.

President Rapelye next gave up his chair to Vice-president Gladding and read the following:

President's Address.

To the Members of the Connecticut Pharmaceutical Association.

Another year has run its course and again we meet to review the work of the past year and to plan for the future.

I shall attempt no lengthy prologue, but shall proceed with such matters as present themselves for our consideration.

THE ASSOCIATION HAS ATTAINED ITS MAJORITY.

At this meeting we attain the age of 21 years, and those who know the history of this association know the great good to pharmacy in Connecticut that has been accomplished by it as year has been added to year and each meeting added to those that have gone before. The interchange of ideas and the knowledge gained thereby has been of great benefit to us, for by discovering our errors we have gained new truths, and by pushing forward with restless energy to greater knowledge and advancement in our chosen vocation we shall attain the goal of our ambition—better pharmacists.

THE COMMERCIAL FEATURES

of our business are rapidly assuming greater proportions and demand our attention. The business of the pharmacist at the present day must be conducted on up-to-date methods or he cannot succeed. Therefore let us apply the business methods of to-day to our calling and awake to the situation as it exists, and by interchange of thought and experience seek to better every condition that affects our business. The cutting of proprietary medicines by department stores is a question which has confronted us for several years and still confronts us with ever increasing persistence. The loss of the pharmacist is more than one of dollars and cents—it is also one of loss of prestige as an exclusive purveyor of medicines.

NO REMEDY YET FOUND.

This prestige is an inherent right which is his by virtue of his education and training. Plan upon plan has been suggested, and some of them tried, to remedy this matter, but so far no effectual remedy has been found.

Medicines should not be furnished to the public except by those who by training know their properties, doses and characteristics.

No trickery or fraud of any kind should be allowed to enter into the dispensing of medicines.

LIVE UP TO THE PHARMACOPŒIA.

We take for our authority the U. S. P., which is accepted by all courts as the standard authority of the United States, although not legalized by them. Having such authority, let us live up to it strictly and see to it that all preparations which it orders are made up to the standard which it imposes.

EDUCATE THE PUBLIC.

I believe the best remedy we have against the cutting evil is to educate the public to use preparations of our own make, and if you do that I advise that you make them and not get some one to do it for you.

The public should be protected in the matter of a uniform standard of quality and strength in the medicines they use and should be protected by law.

PURE DRUG LAW ADVOCATED.

We are fast coming to the time when it will be necessary that we have a pure drug law, and I suggest that steps be taken at this meeting to secure such a law by the appointment of a committee of three to act with the Legislative Committee in formulating such legislation as may be deemed wise.

DISPENSING BY PHYSICIANS.

The dispensing by physicians is a matter which causes us a large loss of business and should not, I think, be allowed, as here, as in some other countries, the prescriber should not be the dispenser, since a death certificate might be made to cover a grave error.

COUNTER PRESCRIBING AND SUBSTITUTION.

Against us the physician urges that we usurp his prerogative and counter prescribe, and he also brings against us the charge of substitution.

While both of these charges may have some foundation in fact, I believe neither of them are practiced to the extent that the physician believes they are, or rather that he is made to believe that they are, by the interested emissaries of some manufacturing pharmacists.

The relations existing between the physician and the pharmacist are not what they should be, and I believe more pleasant relations can be brought about.

I would especially call the attention of the incoming Committee on Pharmacy and Queries to this matter, and suggest that they formulate some queries on the subject and secure the acceptance of same by our members, so that at our next meeting we may have some papers on this important subject.

At our last meeting you authorized the offer of prizes for exhibits and papers, but made no specific appropriation for the same.

I therefore authorized the chairman of the Committee on Pharmacy and Queries to offer prizes to the amount of $30. He has given the matter careful attention, with what result will be seen by his report.

SELECTION OF PHARMACY COMMISSIONERS.

It has been my impression for some time that our method, or want of method, in selecting a list of candidates for the important office of pharmacy commissioner was capable of improvement; as usually done by nominations in open meeting after one or two have been named it has not been considered necessary that much care need be used in the selection of the other four or five names.

This I believe to be wrong, as it is vitally important in making selections for so important an office that every name presented to the Governor should be carefully considered and the fitness of each candidate well weighed, as it by no means follows that, although naturally our first choice would head the list, that

the Governor would make that name his choice.

Therefore I believe that the matter demands careful consideration, and I would recommend that a by-law be adopted which shall define a method of selecting a list of candidates for the office of pharmacy commissioner, and would suggest that the selection be made by the Executive Committee at the meeting and that they report to the association at its morning session.

ILLEGAL LIQUOR SALES.

I approach the question of illegal selling of liquor by druggists with considerable diffidence and a great regret of the necessity, but I feel that the question must be met, and sharply met, for the small minority who degrade their business by converting their stores into bar rooms must not be allowed to degrade the business of the large majority who conduct their business honestly and legitimately.

No man who puts over his door the sign of a pharmacist and there sells liquor to be drunk on his premises deserves the protection of the law, and offenders should be cut off from all privileges granted them by the Pharmacy act.

LEGISLATION AGAINST RUMSELLERS.

Legislation to stop this evil must be devised, and the proper place for it to come from is from this association, for we must show the next Legislature that we are in earnest in this matter, or the liquor interests will show them that we are not in earnest, and we shall suffer not only the disgrace brought on our most honorable calling, but also the increased cost of license. I speak advisedly in this matter, for those of us who appeared before the last Legislature in behalf of our interests know well what the trend of the arguments in opposition were. It is with extreme regret that I admit that this evil exists, but the unpleasant condition confronts us and requires decisive action on our part, and with the large majority on the side of right, and our own interest in the matter, we should be able to devise means to squelch the evil. I would recommend that a special committee of ten be appointed and that they be asked to give the question careful attention, and if in their judgment it be necessary to call a special meeting of the association, that the president be instructed to call such meeting before or immediately after the time of meeting of the General Assembly.

TRIBUTE TO A DEPARTED MEMBER.

I should feel that I were remiss in my duty did I fail to notice the loss sustained by this Association in the death of Ex-president L. I. Munson. This association had no member so faithful to its interests as he. One of the originators of this association, he held alone the distinction of having attended every meeting since its formation; and his devotion to the interests of this Association and of the pharmacists of Connecticut did not rest simply with his attendance at our annual meetings, but he was ever ready to respond to any call which could in any way benefit pharmacy in Connecticut. He has passed away, but leaves behind as a pleasant memory his kindly words, devotion to duty and unselfish interest in our welfare.

That the Legislative Committee did hard and efficient work will, I think, be shown by their report both as regards legislation secured and prevented.

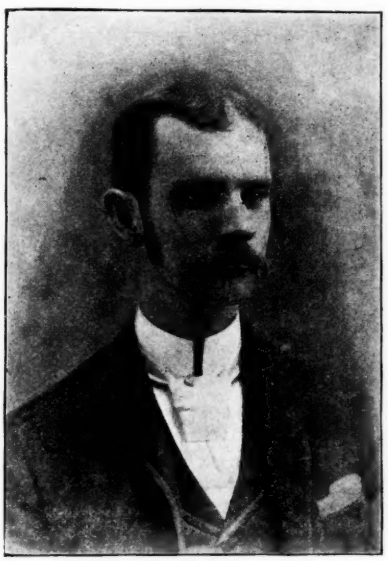
DRUGGISTS IN THE LEGISLATURE.

The association was fortunate in having six of its members as members of the General Assembly of the State, and although they were not all members of the Legislative Committee, they all lent a willing hand in the work of the association before the Legislature. An amendment to the Pharmacy act was secured by which the Board of Pharmacy now consists of three pharmacists instead of, as before, two pharmacists and one physician.

This change was desired because with the present plan of practical dispensing examination it was thought that a practical pharmacist would be more efficient than the physician.

TO RETAIN SURPLUS MONEY.

We endeavored to secure an amendment whereby all surplus money in the hands of the Pharmacy Commissioners should be paid over to this association. We were unsuccessful in securing this amendment, but had it come up later in the session I have no doubt it would have passed.



Elbert E. Fisher,

LOCAL SECRETARY AND NOMINATED COMMISSIONER OF PHARMACY.

That the meeting of the Connecticut Pharmaceutical Association, just concluded at Bridgeport, was the success it proved to be was due in a great measure to the untiring efforts put forth by the efficient local secretary, Elbert E. Fisher. This was freely conceded by everybody present, and he has certainly deserved the honorable recognition accorded to him in his nomination as Pharmacy Commissioner for the State. As told elsewhere, he is a graduate of the New York College of Pharmacy, and is the owner of a very prosperous pharmacy in Bridgeport.

TO CHANGE THE TIME OF MEETING.

A constitutional amendment changing the time of meeting, which was introduced at our last annual meeting and according to our constitution laid over for action at this meeting, will come before you for consideration. I hope it may receive favorable action as the usual inclemency of the weather at this season makes the selection of a warmer season desirable, and will also, I hope, secure a larger attendance at our meetings.

Should the the amendment be adopted no meeting would be held until June, 1897, unless you deem it wise to call a special meeting.

Our treasury has been depleted this year to the amount of $60 by the default of interest on our permanent investment. The principal, $1,000, will no doubt be paid in full.

In conclusion, I have to say that it is impossible to touch upon all matters that I wish to and some must be deferred, as I feel that we shall have all the business that we can accomplish.

The address was referred to a committee composed of F. S. Stevens, Willis L. Mix and S. W. Smith, who were instructed to consider the recommendations of the president and report at a later session.

THE ATTENDANCE.

The following is a list of the members and others in attendance during the reading of the president's address: J. Henry Cody, E. E. Fisher, John A. Leverty, William J. Nichols, F. S. Stevens, Bridgeport; H. A. Dupee, Karl O. Cyrus, Lewis F. Curtis, Frank S. Ballard, Bridgeport; Henry M. Bishop, New Haven; Henry C. Boswell, Greenwich; W. A. Bronson, New Haven; William H. Camp, Canaan; David P. Charot, Jewett City, A. S. Clark, Waterbury; J. S. Colburn, New Haven; A. L. Dickinson, Danbury; James Duggan, Norwich; C. S. Finch, Stamford; O. C. Fleischner, New Haven; C. P. Gladding, Hartford; L. H. Goodwin, Hartford; J. A. Hodgson, New Haven; C. S. Holbrook, Norwich; E. A. Hough, Collinsville; W. P. Jordan, Willimantic; C. Kerr, Danbury; R. H. Kimball, Hartford; G. A. Lamping, Meriden; J. W. Lowe, New Haven; E. A. Lavigne, Springfield; C. F. Messenger, New Haven; W. L. Mix, New Haven; W. N. Noble, New Milford; A. H. Rungee, New Haven; T. R. Shannon, Hartford; S. W. Smith, Ansonia; D. G. Stoughton, C. H. Talcott, Hartford; G. F. Tufts, New Haven; John K. Williams, Hartford; F. W. Reeves, Cambridge, Mass.; F. M. Harris, Worcester, Mass.; Thos. J. Keenan, New York.

A number of the leading wholesale firms and manufacturing pharmacists had representatives present, the following being a partial list: Parke, Davis & Co., Dr. H. H. Royce, C. W. Walker; Lehn & Fink. R. R. Lampa; John Wyeth & Bro., M. Smith; Sharpe & Dohme, J. Foerster; Seabury & Johnson, E. A. Lavigne; C. G. Bacon & Co., S. M. Allen; Hance Bros. & White, W. W. Sykes; Fox, Fultz & Co., E. O. Engstrom; Reed & Carnrick, Wm. A. P. Andrews; Max Zeller, Mr. Van Buren; Seely Mfg. Company, J. Frank Gorman.

TREASURER'S REPORT.

The report of the treasurer showed that the association had $1,200 in the treasury and 288 names on the roll of membership. To these 288 are to be added the 15 new applicants who were admitted to membership at this meeting.

PHARMACY AND QUERIES.

The Committee on Progress of Pharmacy submitted a valuable report, which embraced a brief account of the newer discoveries in chemistry and pharmacy within the year, and a list of notes on formulas. Two papers had been submitted in competition for prizes offered by the association, and one of these is printed in this number of the AMERICAN DRUGGIST. The paper on "The Preparation and Preservation of Syrup of Ferrous

Iodide," by Elbert E. Fisher of Bridgeport, which also appears in this number, was a volunteer paper, and the only one of technical interest or value, excepting the chairman's report, which was presented.

A number of exhibits of syrups, elixirs, ointments and proprietary preparations, also entered in competition for prizes, were arranged in the ante room and a committee to adjudicate upon their merits was appointed by the president. The committee was made up of James Duggan, chairman; Henry M. Bishop and Charles S. Finch. Prizes were afterward awarded to the successful contestants.

REPORT OF PHARMACY COMMISSIONERS.

The report of the State Pharmacy Commissioners was then presented by Henry M. Bishop, chairman. In this report it was recommended that the examinations of the board be on the same scale as the examination necessary for entrance into high schools. This recommendation was approved. The report showed that during the past year licenses had been granted as follows: Renewals, 667; on examination, 44; on certificates, 23; total, 734. In 97 individual examinations 40 were passed, 44 were granted licenses as certificates of examination, 3 were granted certificates but no licenses and 50 failed to qualify. The average percentage was 75.53. The receipts of the board during the year were as follows: Registrations, $78; examinations, $490; renewals, $1,336; total, $1,904. Expenditures: Fees returned, $115; paid to State on account of board, $204.90; sundries, $47.18; salaries of commissioners, $900; clerical services, $100; total, $1,367.08. Balance on hand, $1,367.08; by State, $536.92; total, $1,904. Balance in hands of State, $536.92. Balance in hands of State, February 1, 1895, $409.50, showing increase for the year ending February 1, 1896, of $127.42.

An increase in the number of special examinations was made necessary during the year by the new method of examination, which was introduced by the present president of the association, C. A. Rapelye, and unanimously adopted by the board. With the new method the number is limited to ten.

IMPORTANT REFORM ADVOCATED.

The following important suggestion was contained in the report:

"The board is of the opinion that the time is not far distant, if it has not already arrived, when some preliminary educational requirement should be made one of its rules, and although aware of its authority under the law to make such a rule, it would be gratifying to the members of the board if the members of the association would give them the benefit of their opinions in regard to the wisdom and advisability of adopting a rule of this kind.

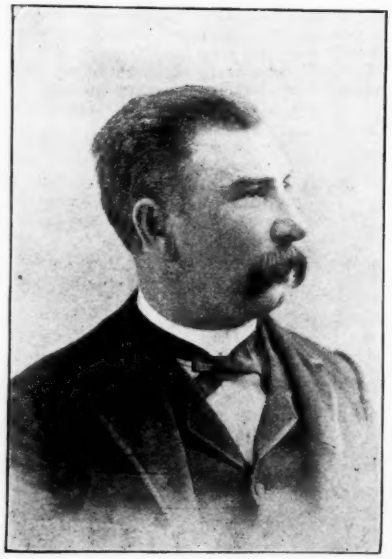
"A certificate of examination equal to an entrance examination to a high school has been suggested as a basis for the adoption of such a rule.

This concluded the routine business of the first session, and an adjournment was made until 9.30, the hour of banquet.

The Banquet.

It is only in the Land of Steady Habits that one would look for a banquet on the evening of the first day's business session of an association of pharmacists. The fact that the members of the Connecticut Pharmaceutical Association are able to sit up, eat, drink and be merry until far on in the morning hours, and then turn up bright and early next morning for the consideration of the weighty technical and trade matters presented to them is eloquent of the moderation and regularity which so characterizes the true Yankee.

The Entertainment Committee who had in charge the arrangement of the banqueting hall are entitled to much praise. Elbert E. Fisher, on whom most of the work devolved, was the recipient of many compliments during the evening, and the selection of his name to be presented to the Governor of Connecticut for appointment as Pharmacy Commissioner of the State was a fitting recognition of his unselfish efforts to promote the success of the meeting, as well as of his ability as a



Frederick S. Stevens,

FIRST VICE-PRESIDENT.

"From good old revolutionary stock comes Frederick S. Stevens, one of the best known men of the city,"—thus runs one of the city records of Bridgeport in its sketch of the gentleman who has just been honored by election to the important office of first vice-president of the Connecticut Pharmaceutical Association. Mr. Stevens has been prominent in the business life of Bridgeport for upward of 30 years, and he is the proprietor of the leading drug store there, as well as one in Danbury. The selection of Mr. Stevens has met with the warmest approval of the trade in Bridgeport.

pharmacist. He is a graduate of the New York College of Pharmacy and a former pupil of the late Professor Bedford.

Frederick S. Stevens of Bridgeport was toastmaster, and filled the exacting duties of this position with noticeable success. On either side of him, as named below, was the following list of guests: H. L. Orters, H. E. Shannon, Rev. L. N. Booth, F. S. Stevens, toastmaster; C. A. Rapelye, Dr. Geo. L. Porter, Thos. J. Keenan, J. T. Lynch.

A Pharmaceutical Menu.

The menu of the banquet was a curiosity in its way, being printed in Latin unabridged, as follows:

Ostreæ cerulei puncta.
Fructum Olivæ. Petioli Apii Graveolentis.
Cucumeres salsæ.
Jusculum regale.
Centropristis striatus bullitus cum Mistura ovorum Galli Bankivi.
Fila Bovis carnis cum Agaricis campestribus.
Pomæ terræ in modo Saratogæ.
Meleagris Americana, var. Vermont. tosti.
Vaccinii macrocarponis fructa saporata.
Rhizomæ Solani tuberosi contusæ. Pisa viridi.
Vinum Saturnium.
Cremor gelidus in modo Neapolitum.
Panicia dulcia. Fructa varia. Nuces mixtæ.
Panes biscoctae cum Caseo.
Infusum seminorum caffeæ Arabicæ.
Folia Nicotiniani Tabaci rotata.
——Edite, bibite et hilares estote.——

Before each plate was also a neat combination card and memorandum of morocco leather. It was the gift of the J. & J. Eager Company of New York, and proved a very successful souvenir. Then a miniature bottle of "Old Crow," presented by the firm distilling that favored extract, attracted the attention of some, but in most cases it was carried away as a reminder of the event.

THE TOAST LIST.

Owing to the unavoidable absence of the Mayor of Bridgeport his place was taken by Attorney J. T. Lynch, who proved himself a most acceptable substitute. Short impromptu speeches were delivered, in addition, by others not included in this list:

1. The City of Bridgeport,
   Attorney J. T. Lynch, Bridgeport.
2. The Connecticut Pharmaceutical Association,
   C. A. Rapelye, Hartford.
3. The Clergy,
   Rev. L. N. Booth, Bridgeport.
4. The Medical Profession,
   Dr. Geo. L. Porter, Bridgeport.
5. The Pharmaceutical Press,
   Thos. J. Keenan, New York.
6. The Press,
   H. E. Shannon, Bridgeport.
7. Humorous Sketches,
   By H. L. Orters.

TOASTMASTER'S ADDRESS.

When the cigars were reached, Toastmaster F. S. Stevens rapped for order, and started the speech-making by saying that the Bridgeport druggists felt it a pleasure to entertain their brother druggists of the State. It was the intention, he said, of the Mayor of the city to be present and offer a welcome to the city, but he was unexpectedly called out of town, and his place would be taken by Attorney J. T. Lynch.

A LAWYER'S IDEA OF DRUGGISTS.

In reply Attorney Lynch said he wished that the duty of extending a welcome to the association had devolved upon Mayor Clark himself, because it would afford those present an opportunity to see a representative Bridgeporter, a man who is a hustler all the time.

The relations between the law and the druggist are wide apart. On divers occasions he had had occasion to go into a drug store early in the morning for 5 cents' worth of bromo-caffeine, but he never saw any reciprocity. The druggist never gets into a lawsuit. It had always been a mystery to him to know who the prescription belonged to—the druggist, the physician, or the patient? It would be a good thing, the speaker suggested, that the members contribute $5 each and have the question settled in the courts.

THE ASSOCIATION'S HISTORY.

Charles A. Rapelye of Hartford, president, responded to the toast allotted to the association. He gave a brief history of the association, its prosperous growth and its present flourishing condition. He said that the association was started about 20 years ago with a membership o

25, and its roster now reaches over 300. The society in the past had been very fortunate in the selection of its presidents, and under their care had passed through infancy and youth, but had not quite reached the milestone of manhood. He referred to a number of the presidents who had taken a special interest in the association and who had accomplished much good. He believed that the association was of much benefit to the druggist, especially in preventing legislation against their interest and promoting that which would prove a benefit.

THE CLERGY.

In responding to the toast, "The Clergy," Mr. Booth, who was introduced to the gathering as the son of a former member of the association, said he felt perfectly at home with the druggists because of his experiences in early life. The visions of youth had been recalled to him, he said, by the emblems of the noble craft which adorned the *ménu* card. He was not a compounder of medicine to-day, but an expounder of certain theological doctrines.

In closing Mr. Booth said that he too might justly complain of the reciprocity of the druggist. He said that he did not get a chance to talk to many of them in church, but was glad to address them on such an occasion.

THE MEDICAL PROFESSION.

Dr. George L. Porter was presented by Toastmaster Stevens as a man of National, State and local reputation, a student of literature and a talented speaker. He reviewed briefly the career of the doctor during the war and in civil life and paid him a glowing and deserving tribute. Dr. Porter responded to the toast assigned him in a most interesting manner and prefaced his remarks with several stories which were very amusing. He said in part:

I esteem it a special privilege to come before you to-night as a representative of the medical profession. Our relations are of so direct and important a character, that, for our own sakes as well as for that of our patrons, they should be most cordial and friendly. Our professional success depends so largely upon the honesty and reliability of yours that we are in no small degree in your hands. No matter how well experienced a physician may be in the selection and the action of drugs—no matter how well advised he may be in the recognition, progress and pathology of disease, if the medicines he selects and the quality he prescribes are not those employed in the compounding of his prescriptions, the result may not justify his expectations and he is liable to unmerited blame and is held responsible for the perchance unfortunate termination of the case.

Therefore the reputation for furnishing pure and reliable medicinal agents, of standard quality and strength, and accurately following the precise prescription is of the utmost value to every member of your association. The medical profession appreciates how much has been accomplished by your association in advancing the requirements demanded for membership. In the last issue of *The Journal*—the organ of the American Medical Association, this advanced position is thus appreciatively referred to:

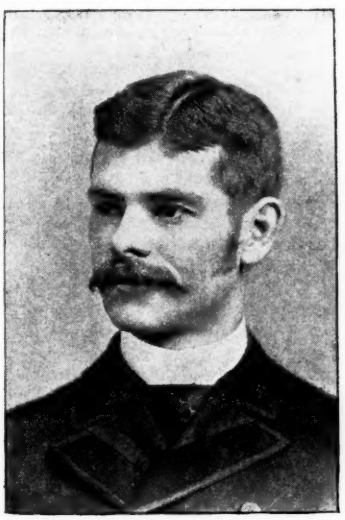
A GENEROUS VIEW OF THE PHARMACIST'S POSITION.

"The physician who looks upon the druggist merely as a purveyor of drugs and considers that his duty is fulfilled when he can simply supply patients with the medicine that he has prescribed, will doubtless in the future awake to the fact that he can call upon an intelligent pharmacist to originate a special preparation in order to combat a certain disease; to analyze various products which have given unsatisfactory results, to accurately perform urine analysis, or to make a microscopic investigation which will lead to important results. Thousands of pharmacists to-day possess the necessary qualifications to thus aid the physician, and with the hearty assistance of the medical profession in the true scientific spirit of recognizing truth wherever it is found and in that broad liberality which casts aside prejudice and preconceived notions, the higher education of the pharmacist must be eagerly welcomed by the lovers of real progress in the medical profession." . . .

In the more effective derivation of the active principle of curative drugs and their more attractive compounding there is yet room for improvement. Along this line, aided by modern instruments of precision, is to come the next great advance of the science of medicine. . . .

Some have thought that as knowledge develops, medicines will be abandoned, but as I have already shown, drugs will not be abandoned, but more skillfully employed.

Even if doctors should desire to attempt cures without their use, their patients would not allow them. Most people believe that if a doctor does not give them a prescription and only advises them regarding hygiene and diet, they are not receiving professional treatment and they are not getting their money's worth. Until wisdom is justified of her children, the sons and daughters of mankind will estimate the value of professional treatment by the amount of medicine they receive, and the doctor and druggist will continue to flourish as of yore.



John W. Lowe,

SECOND VICE-PRESIDENT.

John W. Lowe, who has been elected second vice-president of the Connecticut Pharmaceutical Association, is one of the best known druggists in New Haven. He entered the drug business soon after leaving school and has remained a devoted disciple of Galen ever since. He is now in his thirty-fifth year, and presents the appearance of a clever, bright and vigorous character, with just enough of Yankee shrewdness in his make-up to form an interesting personality. He is one of the most popular members in the association.

THE PHARMACEUTICAL PRESS.

The chairman then introduced Thomas J. Keenan, associate editor of the AMERICAN DRUGGIST AND PHARMACEUTICAL RECORD, who responded to the above toast. Mr. Keenan dwelt on the close relationship which existed between associations of pharmacists and the pharmaceutical journals. The latter, he said, considered it their duty to do everything possible to foster the growth of druggists' organizations, as they saw more clearly perhaps than even the persons directly affected the value of unity of action in all efforts looking to the betterment of pharmacy as a whole. Some there are who hold that the journals have abolished the need of associations, for the reason that whereas the original purpose of associations was to afford a means of interchange of thought and opinion between the members, and for the announcement of important discoveries in the trade or profession to which they applied, such need no longer existed, authors and inventors preferring to announce their discoveries at once through the medium of professional journals. The speaker said he could not subscribe to this view, but predicted for the future a great accession of interest in trade and professional organizations. He brought his remarks to a close by paying a deserved compliment to the officers of the Connecticut Pharmaceutical Association who, he said, had succeeded in attracting a large attendance of members to the meeting without bait of any kind in the shape of amusements, outdoor games, etc.

After the recitation of some humorous selections by H. L. Orters, H. E. Shannon, city editor of the Bridgeport *Standard*, delivered an eloquent response to "The Press."

Robert Lampa, with Lehn & Fink of New York, spoke for the traveling man. His remarks were short, but pointed. He does not believe that the time has come when the salesman can be dispensed with, but said that they were a necessity and were here to stay. Other remarks were made by ex-President Otis of Binghamton, of the New York State Pharmaceutical Association, Richard H. Kimball and F. M. Harris of the New England Drug Union.

Second Business Session.

OFFICERS ELECTED.

The second business session was convened by President Rapelye, on Wednesday morning at 10 o'clock. The first thing to come up was the election of officers for the ensuing year. Many nominations were presented and the choice resulted as follows: President, C. P. Gladding of Hartford; first vice-president, Frederick S. Stevens of Bridgeport; second vice-president, John W. Lowe of New Haven; secretary, Arthur S. Clark of Waterbury; treasurer, Lester H. Goodwin of Hartford, re-elected.

Frederick Wilcox, who has served as secretary of the association for the past 17 years, was elected secretary emeritus. He was obliged to retire on account of ill health.

REPORT ON PRESIDENT'S ADDRESS.

Following the election of officers came the report of the Committee on the President's Address. The committee first recommended that some steps be taken to prevent the practice of physicians dispensing medicines, but the measure was defeated. Another recommendation of the committee was that the matter of illegal liquor selling, as referred to in the president's address, be referred to the Legislative Committee with instructions to act in the best interests of the association. It was decided that the committee had their hands full of such matters at the present time and this was also voted down.

Another recommendation of the committee was that in the future the names of the candidates for appointment on the State Board of Pharmacy be submitted by the Executive Committee at each annual meeting, but the recommendation was not agreed to.

It was decided to ask the Legislative Committee to arrange for the passage of an act whereby the money now held in surplus by the State Board of Pharmacy revert to the association instead of to the State as has been the custom in the past. A recommendation of the com-

mitee to the effect that three trustees be appointed to take charge of the trust fund was defeated on the ground that it was safe in the hands of the treasurer.

FOR PHARMACY COMMISSIONERS.

The next business of importance was the selection of a list of six names, members of the association, which will be presented to Governor Coffin for his consideration in the appointment of a commissioner to succeed Henry M. Bishop of New Haven, whose term of office expires this year. The list named was as follows: E. E. Fisher, Bridgeport; Henry M. Bishop, New Haven; R. H. Kimball, Hartford; J. A. Leverty, Bridgeport; J. D. Goulden, Stamford; John R. Pitt, Middletown. Another list was also prepared for 1897, inasmuch as the next meeting of the association will not be held until June of next year. The second list contained the names of S. W. Smith, Ansonia; Frederick S. Stevens, Bridgeport; R. H. Kimball, Hartford; A. N. Dickinson, Danbury; J. D. Goulden, Stamford; H. M. Bishop, New Haven

Final Session.

At the afternoon session, Clark Z. Otis of Binghamton, N. Y., asked the association to indorse the plan of the Universal Trade Association for the suppression of cutting. He explained the workings of the plan, which resolved itself, so far as could be understood, into a system of imposing a special tax on the manufacturers of proprietary remedies. He said that the association had now a membership of 8,000 and had been indorsed by the pharmaceutical associations of Ohio, Michigan, Pennsylvania and Kentucky, and by the local associations of Cincinnati, Cleveland, Toledo and Syracuse. Five hundred druggists had already subscribed in New York, or 95 per cent. of those seen. Every officer of the association, except one assistant secretary, was a retail druggist. Mr. Otis made no positive statements as of his own knowledge, explaining in nearly every instance that "the general manager told me." The general manager should have told him more about the action of the Pennsylvania Association. After some discussion, which was participated in by Messrs. Duggan, Whittlsey and Main, it was resolved to indorse the work of the U. T. A.

F. M. Harris of the New England Druggists' Union was introduced and addressed the gathering on the work of the New England Druggists' Union. He said that he had come to change his views of late regarding the possibility of a majority of the druggists of a town being able to dictate terms to a minority. He once thought it possible that if 98 per cent. of the druggists of a given place were organized they could do this, but he had found out his mistake. The N. E. D. U. were now adopting different tactics. They propose to put on the market a line of preparations of their own manufacture. Fifteen pharmacists of known ability will pass upon the formulas and finished preparations, and with the prestige to be gained from the knowledge of this they hope to supplant entirely the preparations of those who refuse to assist the retail druggist in maintaining prices.

He was followed by Mr. Reeves, who announced that he did not appear as a competitor of Mr. Otis. He gave a brief explanation of the policy and purpose of the New England Druggists' Union, and intimated that a change of tactics had been inaugurated. In place of giving their attention solely to the commercial side of pharmacy they now proposed to advance the scientific end of the profession, and by improvements along these lines show the public in time that they can best protect their interests by patronizing the educated pharmacist.

James Duggan, chairman of the Committee on Prize Papers and Exhibits, presented his report at this stage, and prizes were awarded to the authors of the following papers: "The Value of a Pharmaceutical Journal to the Pharmacist," by Richard H. Kimbal; "Is it Profitable for the Pharmacist to Manufacture His Own Proprietary Articles," by John A. Leverty.

The proceedings were terminated by the installation of the newly elected officers, and the passing of a resolution to the effect that the resolutions of thanks extended by the association to Frederick Wilcox be suitably engrossed and presented to him by the committee having the matter in charge.

CONNECTICUT.

George Pike, the druggist of E. Hartford, is just recovering from a fall he sustained a short time ago.

Druggist J. T. Eaguy of Grand avenue, New Haven, has been in New York taking in the grand opera.

J. O. Loomis has opened the drug store at 259 Grand avenue, New Haven, and not Hall & Loomis, as before reported.

Apothecaries' Hall, at Danbury, has been opened again for business. This place was burned out a short time ago.

Hyatt & Wheeler, druggists of Danbury, have dissolved partnership. William B. Wheeler continuing.

R. G. Cleveland, connected with Thompson's drug store, at New Britain, will shortly wed Miss Grace R. Holley.

Ralph Paine, who has been working in Providence for a few weeks, has returned to New Haven.

E. McQuade of the Bristol Drug Company, at Ansonia, has been visiting friends in Bridgeport.

Druggist S. E. Stillson of S. Norwalk has been quite ill of late, suffering from a severe attack of neuralgia.

Lewis A. Elliott, formerly druggist on Chapel street, New Haven, has gone to the Island of Bermuda for a prolonged stay.

J. Harrison Monroe, the druggist of Guilford, has returned from a pleasant stay of three weeks, spent in Florida and at the Atlanta Exposition.

John Hartigan, a highly-esteemed clerk in Booth's drug store, Bridgeport, died in the latter part of January of malarial fever. The deceased was 19 years of age.

James W. Smith has opened a pharmacy at 23 Main street, Stamford. Mr. Smith is a graduate of the New York College of Pharmacy.

M. J. Holloran, a druggist, at New Britain, has secured a 15 years' lease of a lot on Main street, and upon it he will erect a one-story building and move his drug business there.

N. P. Ward, of Medford, Mass., has been appointed New England, selling agent for the Danbury Pharmaceutical Company. He was for ten years with Schieffelin & Co, of New York.

The drug store on East Main street Thomaston, owned by M. J. Hanley, has been sold to Mr. Loomis, a former clerk. The stock and fixtures will be removed to New Haven, where a store will soon be opened.

Joseph S. Stokes, formerly prescription clerk at John H. Parker's pharmacy, at Meriden, has been taken to the Hartford Hospital, where an operation will be performed by Dr. St. John, two abcesses having formed in his ear.

At the next meeting of the Board of Aldermen at Ansonia, it is altogether likely that Edward Vance, the druggist, will be elected a member of the Board of Charities, to succeed Judge Munger, who recently resigned.

The Ansonia Board of Charities have voted to give to S. W. Smith & Co. the drug business for the next four months. After that the next oldest drug firm will have the business for the succeeding four months.

David Healy of the City Pharmacy, Derby, has been spending a vacation of ten days in Warren, Pa., the home of his friend, J. Louis Nugerer of the Stirling Opera House, who accompanies Mr. Healy on his trip

The suit of Edward Smith of Winsted against the Apothecary Hall Company of Waterbury has been decided in favor of the plaintiff. The suit was brought to recover a bill for oil sold the Apothecary Hall Company by Smith.

Five of the eight candidates for druggists' licenses examined by the State Board of Pharmacy, at Hartford, on January 15, were successful, as follows: Louis N. L'hereaux, Dennis F. Murphy, Greenwich; George L. Ropport and John H. King, Hartford.

There's a chance for some enterprising young man to open a drug store in Bristol. William Allderige, who owns the Wellington Hotel and the block on Whiting street, offers six months' rent free to the druggist who shall start a store in his block.

Nelson I. Blake, who has been in charge of the branch store of the Bristol Drug Company, at Seymour, has resigned and gone to Stafford Springs, where he will go in the drug business with Dr. La Bonte, formerly of Derby. Mr. Blake's Seymour friends wish him every success in his new enterprise.

Cyrenius Theriault, proprietor of the pharmacy, Putnam, who was refused a drug license by the county commissioners at their meeting on November 22, has made an assignment to Richard Gorman. The liabilities are about $2,200. No inventory has been taken.

Bacon & Co., bought the drug business of the late Thomas F. Lavin on South street, Danbury, at auction a short time ago. S. M. Aller of Norwalk, was Bacon's representative at the auction, and his bid was $1,760, which was accepted. The store is still for sale and it is likely some one will buy it out ere long.

A rather interesting exhibit has been in the window of Barnum's pharmacy, at Danbury, for some time. It consisted of an old newspaper announcing the death of George Washington, an officer's commission in the Connecticut Continental militia and an old fashioned dentist's outfit. The exhibit attracted considerable attention.

MASSACHUSETTS.

BOSTON, February 4, 1896.—A bill has been introduced in the Massachusetts Legislature, providing that all applications for registration as surgeons and physicians shall be made on blanks to be furnished by the Board of Registration and Medicine, and shall be signed and sworn to by the applicants. Only those persons who shall show they are of good moral character, qualified, and give proof that they are 21 years of age, shall receive certificates. The bill imposes a fine of not less than $100 nor more than $500 upon a person practicing under an assumed name.

OPPOSED TO THE REVISED PHARMACY BILL.

In a recent interview, William W. Bartlett, President of the Massachusetts Druggists' Alliance, expressed himself freely upon the Pharmacy bill, which has been presented to the Legislature. The bill, in his opinion, is unconstitutional in several respects. Among the clauses to which President Bartlett takes exceptions are the elimination of the section 7, chapter 313, of the Acts of '85, and the changing of section 8, which permits the board to revoke a druggist's certificate. According to his views of the first clause, it practically deprives druggists of a trial by jury. As to the second, the right to pass judgment in the absence of the accused, is autocratic in the extreme. The proposition that druggists shall pay $1 on applying for licenses of the sixth class, whether the licenses are granted or not, is strongly scored by Mr. Bartlett ; as is also the supplement to this of the board's right to search a man's premises without a warrant.

Secretary Butler of the State Board of Registration considers the bill just, and says that he cannot see how any druggist who conducts his business properly can object to it.

AT THE HEARING.

Mr. Bartlett represented the alliance at a hearing given by the Committee of Public Health one day last week.

Hon. A. E Pillsbury stated that he appeared as representative of the Massachusetts Pharmaceutical Association, which favors the codification of the laws relating to pharmacy. Mr. Bartlett stated that Lawyer Pillsbury had been retained by the legislative committee, and that if the Board of Directors of the Pharmaceutical Association had approved the retention, it had no right so to do. The chairman of the committee reminded Mr. Bartlett that the association could fight its own battle outside the committee room, and then went on to say that there are from 2,000 to 3,000 registered druggists in the State, but there are 3,800 certificates out. One man, he said, held three, and the board had discovered that he had "farmed" them out, and that business was being done in three places on his certificates. For one he got $12 a week ; another, $10, and the third, $8. The chair further said that business was being done on certificates of persons who are dead. Registration every two years will have the effect of correcting some of these abuses.

PRESIDENT WHITNEY'S VIEWS.

Henry M. Whitney of the State Board of Registration in Pharmacy stated briefly why the board desires changes made in the law. He said: "First of all, this new law really consists of such changes and additions as are necessary to harmonize existing conditions, and to determine clearly all powers and duties devolving on or made special charges of the board. The work of the board is reformatory in its character, directed toward the prevention of abuses and not the punishment of offenders." With respect to the granting of liquor certificates, Mr. Whitney said, when the board discovered that a druggist had proved himself unworthy, it should have the power to take away its sanction of his business. This was intended to protect the community from the evil of a rumshop under the guise of a drug store.

ANNUAL MEETING OF THE DRUGGISTS' ASSOCIATION.

The twentieth anniversary of the Boston Druggists' Association was celebrated recently in Parker's, and the occasion was made notable by the presence of Governor Greenhalge, Mayor Quincy, Hon. Winslow Warren, Collector of the Port of Boston; Hon. William B Rice, of the Associated Board of Trade, and Hon. Samuel B. Capen, of the Municipal League. There was a large attendance of members, and more than the usual amount of interest taken in the proceedings. At the business meeting, which took place before dinner, the following named officers were elected : President, Ernest C. Marshall ; treasurer, Thomas L. Jenks ; secretary, James O. Jordan ; executive committee, Harvey S. Sears, Charles A. Kilham, William A. Chapin, George W. Cobb, Freeman H. Butler, Charles F. Cutler, Edgar L. Patch ; committee on membership, Reuben L. Richardson, George H. Ingraham, Fred L. Carter, George F. Kellogg, William C. Durkee.

Henry Canning, the retiring president presided, and in introducing the after-dinner speakers paid the association a high compliment.

In speaking of the Pharmacy bill, Governor Greenhalge said it had been his desire and aim to retain the best men in the Board of Pharmacy. He believed the druggists had more to deal with than the mere profits of and premiums derived from the business. A true druggist would rather put up a prescription than sell a patent medicine, because in doing so he was developing the professional and scientific elements in the business. He briefly referred to the law of 1885, that had taken from the saloon the business of the drug store. "What we want," he said in conclusion, "is a law that will not grant a license for one thing to be prostituted for another."

Instructive and entertaining speeches were made by Edward S. Barret, secretary of the State Board of Health; C. P. Flynn, of the Apothecaries' Guild; F. M. Harris, president of the New England Retail Druggists' Union, Hon. Winslow Warren, Mayor Quincy and others.

New Stores and Changes.

S. J. Briggs & Co. will open their third drug store in Providence about April 1.

C. A. Glancy & Co., Pawtucket, R. I., have opened another drug store in Broadway, that city.

Howard Horton will return to Lynn to Dr. Flint's store, and T. J. Donovan will stay with Moulton.

A new drug store will be opened in Siney's building, at the corner of Dorchester avenue and Romsey street, by Horace P. Childs of Attleboro.

Improvements are being made in the drug store at Brockton, formerly owned by Frank Swift, but recently acquired by Emerson Goldthwaite.

Joseph I. Moulton has bought the store in Salem previously owned by Frank E. Flint of Lynn and has taken possession.

W. J. Gearon of Salem who was formerly in charge of the Flint store in that city, has opened a store on his own account on Boston street, Salem.

Andrew J. Casey & Co. will open their new store at 44 Market square, Newburyport, this week. They also have an elaborate Low art tile fountain put in.

Towle & Rounds is the way the new sign over the store 309 Pine street, Providence, reads. A superb Low art tile soda fountain is one of the attractions of the store.

F. M. Proctor will open his new and elegantly-appointed store at 263 High land avenue, Somerville, about March 1. He has ordered a $2,500 Low fountain.

PENNSYLVANIA.

THE PHILADELPHIA DRUG EXCHANGE.

PHILADELPHIA, February 5.—On Tuesday, January 28 the thirty-fifth annual meeting of the Philadelphia Drug Exchange was held in their new quarters in the Philadelphia Bourse, and after the secretary's and treasurer's reports had been read the following officers were elected : President, Edward R. Hance ; vice-president, Clayton F. Shoemaker ; treasurer, H. B. Rosengarten ; secretary, William Gulager ; directors, Alexander H. Jones, W. N. Kline, H. N. Rittenhouse, John Fergusson, H. C. McIlvaine, Dr. R. V. Mattison, Charles E. Hires and Walter Smith.

At the regular meeting of the Board of Directors on January 8 an amendment was adopted to Article III. of the Constitution, in regard to increasing the membership fees to $15 per annum. From the foundation of the Philadelphia Drug Exchange, in January, 1861, until the present time, a period of 35 years, the dues for membership have uniformly been $10 per annum.

This amendment was unanimously adopted.

The treasurer's report showed a balance on hand at the beginning of the year of $214.54, receipts were $1,701.66, expenditures $1,662.46, leaving a balance of $253.74.

EDWARD R. HANCE ELECTED PRESIDENT.

The new president, Mr. Edward R. Hance, has for the past 18 years acted as treasurer of the exchange. During that period he has been very efficient in the discharge of his duties, and has always managed to secure enough funds to keep the organization in the front of the business bodies. About 23 years ago Mr. Hance was president of the exchange, and is thus simply returned to office.

BOERICKE & TAFEL ROBBED.

On January 26 the store of the wholesale homœopathic firm of Boericke & Tafel, 1,011 Arch street, was entered and the fireproof safe broken open. The robbers secured $200 in currency and $8,000 in registered bonds.

HONORARY MEMBERS OF THE COLLEGE.

The Philadelphia College of Pharmacy have elected J. H. Maiden, of New South Wales; Dr. Oscar Loew, of Tokio, Japan; P. S. Simmonds, of London, England; Prof. F. E. Lloyd, Forest Grove, Oregon, and Dr. Frederick Hoffman, of New York, honorary members, and A. E. Wild, Darjeeling, India, and William Fawcett, Jamaica, as corresponding members. An amendment has been made to the by-laws in regard to the membership fees of the College of Pharmacy. Heretofore the college has had nothing but full members, now it is proposed to create associate memberships; these members to have the same privilege of all others, except in voting and holding office, and will pay $3 instead of $5.

On January 20 the State Board of Pharmacy inspected the Philadelphia College of Pharmacy

PHENACETINE SMUGGLING.

The seizure of twelve packages containing 210 oz. of phenacetine from the Red Star Line steamer Switzerland, created considerable excitement in this city, and the arrest of Charles Schmaling, chief steward, and George Goll, steerage steward, Joseph Paulino, who was arrested while carrying the contraband to the shore, and Bennetti, the storekeeper. The first three were held in bail, while the others were held as witnesses. Schmaling and Goll were held at $1,000 bail, respectively; Paulino was held in $300 bail, as he knew he was doing wrong in secreting the packages, which was enough evidence against him. There was no evidence that Bennetti, the storekeeper, knew what was in the packages and he was discharged, but put in $100 bail to appear as a witness.

Philadelphia Notes.

On January 28 M. N. Kline attended the meeting of the National Board of Trade in Washington.

Schandein & Lind, the popular perfumers, have placed a very find exhibit of their goods on view at the Philadelphia Bourse.

Shoemaker & Busch, the enterprising wholesale druggists at 602 Arch street, have been compelled to secure the adjoining building, 604, as their quarters have become too cramped.

Mr. Izard, formerly manager of Dr. William McPherson's drug store, at Fourth and Wharton streets, has bought out the drug store of Dr. A. H. C. Rowland, 3,629 Haverford avenue.

William B. Burk & Co., the well known sponge house at Sixth and Arch streets, are getting up a fine display of sponges, which is to be placed in the exhibition room of the Bourse Building.

A meeting of the new officers and Board of Managers of the Philadelphia Drug Exchange was held on February 6. After the organization was effected a dinner was served, and a number of the members made short speeches.

E. G. Haehnlen & Co. will in a short time open the store at the southwest corner of Seventh and Arch streets, with a fine display of sponges. For a number of years this firm have occupied the building, 420 Library street, which will be vacated as soon as the new place is opened.

L. Hassell Lapp, who for many years was president of the Lapp Drug Company, is lying dangerously ill at his home. On January 23 he was taken with a paralytic stroke. At first it was believed that he would not recover, but now the family have some hopes.

M. N. Kline, of the firm of Smith, Kline & French Company, was 50 years old on this day, and he celebrated it by attending the meeting. On the 15th of this month the anniversary of Mr. Kline's entrance into the drug trade will occur. This being the thirty-first year that he has been in the trade.

Howard French, a trustee of the Philadelphia College of Pharmacy, is always trying to do something which will be of benefit to the college, and there is hardly a year goes by that he does not make some token of his love for his alma mater. Recently he presented to the college the library of Dr. Rushenberger. This library consists of many books, numbering over 2,000 volumes. The gift is highly appreciated by the faculty.

OHIO.

CINCINNATI, February 5, 1896.—During the past fortnight matters have been decidedly warm for the local druggists. Arrests have been made by the wholesale of pharmacists who are charged with selling adulterated goods, and the result is that the members of the craft are up in arms in order to defend their reputations and protect their interests. In other words, the local druggists are going to fight the Food and Dairy Commission to the last ditch, as it were.

This promises to be a bitter and prolonged war, and the culmination will be awaited with deep interest. Local druggists have tried in every way to prevent Commissioner Luebbing from arresting them, but to no purpose. The other day a delegation of pharmacists called on the Commissioner with a view to ascertaining how he felt toward them. A number of the callers were at the time under arrest for selling adulterated goods. "You must either plead guilty to the charge of adulteration or prove your innocence," was all the satisfaction they could get out of him. In consequence several of them

PLEADED GUILTY

before Magistrate Winkler, and were fined $25 and costs, which is the minimum penalty. The great majority of druggsists, however, are not smitten with the idea of acknowledging themselves guilty without the slightest effort to vindicate themselves before their customers. An association has been formed in consequence with a view of fighting the commission. Many prominent druggists belong to the organization, and all arrangements so far have been made strictly on the "Q. T." Commissioner Luebbing is informed, however, that each member is required to contribute $5 toward a "fighting fund" and sign an agreement to be in readiness with $20 more when occasion shall require it. This would raise no mean fund when it is considered that there are over two hundred drug stores in the city With this fund to back them the druggists intend to take their cause from court to court and leave no stone unturned to "square themselves." Commissioner Luebbing is just as resolute on the other hand, and he says he will continue with the cases of the druggists, one at a time, until the whole list has been gone through with. This is the situation at the present time, and a merry war will inevitably follow. Of the ninety-two samples of drugs recently procured by the officers of the commission, and turned over to Chemist Fennel, not more than twenty proved to be near the regular standard

MORE WARRANTS.

Last Thursday's warrants were as follows:

Selling impure phosphoric acid—Otto Lippert, Freeman avenue and Liberty street; William T. Knemoeller, Findlay and Baymiller streets; M. Weinberger, Eighth street and Freeman avenue; Bernhard J. Pardig, Wade and Linn streets; Robert G. Wray, Fourth and Mill streets; Albert Wetterstroem, 435 Colerain avenue; A. De Lang, Fourth street and Broadway; W. H. Grothaus, Woodburn and Myrtle avenues; M. F. Keeshan, Gilbert avenue and Nassau street.

Selling impure compound solution of iodine—John Darraugh, Central avenue and Richmond street; J. H. Klaphacke, Clark street, between Linn and Cutter; Edward A. Keeshan Third street and Broadway; F. H. Freerick, Gilbert avenue and Morris street.

Selling impure solution of subacteate of lead—Robert Groenland, Fifth street and Central avenue; D. R. Allen, Race street, near Sixth.

Selling impure tincture of iron—J. D. Diebold, Gest street and Freeman avenue.

Selling impure lime water—Otto E. Kistner, Seventh and Linn streets; Otto Heineman, Laurel and Linn streets; A. Q. Zwick, 532 Elm street; F. H. Semidter, Linn and Findlay streets; and Louis Rosseler, 502 Main street.

Selling other impurities—C. Kampfmueller, Woodburn avenue and Fairfax street, Martin Dodsworth, Seventh and Elm streets; Martin Stoll, 492 Vine street; John Keeshan, Sixth and Walnut streets; A. Ross, Ninth and Vine streets; and C. A. Doerr, Liberty street and Central avenue.

Some figures from the chemical analyses of Professor Fennel in reference to the alleged adulterated commodities named are given: The phosphoric acid sold by Albert Wetterstroem was 79 per cent. too strong in acid solution; that by A. De Lang, 87 per cent. too strong; that by W. H. Grothaus, deficient in acid strength 15 per cent., and impure; that by M. F. Keeshan, 40 per cent. too strong in acid solution; that by Col. George Kylius, 17 per cent. too strong in acid solution. Frank L. Grothe, it is charged, was selling tincture of chloride of iron that had not been standardized, and which was impure; John Darraugh, compound tincture of iodine that was too strong in iodine by 36.6 per cent.; D. R. Allen, subactate of lead solution deficient in strength by 82 per cent. and impure; Robert Groenland, solution of subacetate of lead deficient in strength 36 per cent. and impure; J. G. Diebold, tincture of chloride of iron deficient in alcoholic strength and 15 per cent. weak in metalic iron; Edward A. Keeshan, compound tincture of iodine with iodine deficient 218 per cent. and not pure; F. H. Freericks, compound tincture of iodine with iodine deficient 12.7 per cent.

THE FIRST OF THESE CASES

was heard in Squire Winkler's court the latter part of last week. Frank Freericks, a graduate of the Cincinnati College of Pharmacy, and a well known Walnut Hill's pharmacist, was the defendant. He was arrested for selling impure compound tincture of iodine. After being out all night the jury brought in a verdict of not guilty. The contest was a strictly legal one, and was won on the merits of the defense. It was ably and determinedly contested by Judge Dye for the prosecution, and with a coolness, courtesy and skill by Anthony Dunlap for the defense. The druggists generally feel highly elated over the firs victory in the present crusade against

them by the Food and Dairy Commission.

Since the present crusade of the Food and Dairy Commission a number of prominent citizens have spoken in reference to the movement. The general opinion seems to be that the commission is doing the city a great good, and that the movement should receive the hearty support of all.

DR. WHITTAKER WAS INTERVIEWED

yesterday, and talked to some length about the situation. He said, in part:

How can there be any question about it? I know nothing of the charges or the findings in individual cases, but I do know much of the fraud in drugs and of our failures in the treatment of disease on account of them. It seems to me there is nothing in the criminal calendar as bad as the adulterating of drugs, and it is only because the public conscience has become blunted by quackery of all kinds in this city that the question could ever come into consideration as to the advisability or justifiability of prosecuting this kind of fraud. There are, of course, many honorable and incorruptible men among the druggists of this city, and it is the peradventure existence of these men which saves us from the fate of Sodom and Gomorrah.

Unfortunately the commercial spirit has become so strong as to have overcome every kind of scruple, even that which ministers to the cure of disease and the relief of pain. It is impossible for us to make bricks without straw. We cannot cure or control disease without pure drugs. Aside from the skill which is necessary to make a diagnosis and the judgment to prescribe the proper remedy, results will depend upon the purity of the preparations administered. It may be safely said of nearly all the proprietary preparations that they are impure, or that they fall short, and the same disqualification applies to many of the standard remedies upon which we absolutely rely.

For instance, we often order creosote in the treatment of tuberculosis, but we get a pure preparation only from certain druggists. We give it chiefly for its purifying effect upon the stomach. Creosote, when perfectly pure, is harmless in almost any dose, but if contaminated with carbolic acid or other impurity, it is injurious to the stomach or actually produces disease of the kidneys. An impure creosote is a poison.

Quinine is another drug which suffers sophistication, for often enough inferior alkaloids of Peruvian bark are mixed with it or sold for it.

The salicylates, especially of soda, have come into extensive use and have remarkable virtues in the treatment of rheumatism and allied disorders. These drugs are often so impure as to injure the stomach or actually produce disease of the kidneys in the attempt of nature to eliminate the poisons which they contain.

DISTILLED WATER SCARCE.

For a long time it was actually hard to get a pure article of distilled water. Certain remedies, notably the nitrate of silver, are ruined by the presence of any impurities in the water. This list might be long continued. Medical men make loud lament concerning the fraud in drugs. The men who perpetrate these frauds originally are not so much the druggists in this city as the so-called commercial agents of manufacturing firms who are reduced to desperate means in competition. It ought to be known by the people that we have a committee of the best men selected by the physicians and by the pharmacists, whose duty it is to revise the pharmacopœia at stated intervals and to purify it, as the academicians do the language of France. These men establish the standard of the various remedies. But what good is all of their work, and what good is all the skill of the physician if the standard is disregarded and the vampires who poison our food and drugs may go unpunished.

Dr. Francis Dowling thus tersely expressed his views upon this subject, which is now of such absorbing interest in this city:

I have not given the matter of Commissioner Luebbing's warrants very close attention, but I would say in a general way that any one who does missionary work in regard to giving us pure food ought to have the unqualified support of every good citizen. I think that especial care should be taken that our supply of milk is pure, for this is largely the food of infants and very young children. The nourishment of these little tots, in the early stages of their development when the physical mold, so to say, is being formed plays a very important role in their future well being, and the matter of having physically and mentally sound citizens is governed in no small measure by the quality of food furnished during this development period of the individual. It is a well-known fact that our hospitals and asylums contain numerous incurable cases, which date the incipiency of their ailments back to the years of early childhood.

I think that our druggists, as a class, are honest and endeavor to furnish pure medicienes; those who are derelict in this regard should be severely dealt with. Give Commissioner Luebbing a helping hand in his good work, for he deserves it.

Dr. H. S. Hussey, when consulted upon the work of the commission, stated as follows:

In reply to your request for an expression of my opinion on the action of the State Dairy and Food Commission, I wish to state that I believe it is doing a necessary and good work, and should receive the support of all public spirited people. In regard to the justice of the arrest of dealers in impure butter, milk, eggs, etc., or in fact any impure article, there can be no question. They should not only be arrested, but punished, and the punishment should be sufficient to correct the evil.

Mr. Cavagna, of Cavagna & Son, asked what he thought of the movement, replied:

No more needed laws were ever passed by the Ohio Legislature than the pure food laws, and I am personally glad to see them properly enforced.

No dealer should be allowed to sell impure or adulterated goods, but ought not some amendment be made to the law, as it now exists, to protect the retail dealer as well as the purchaser? As you buy your goods of the grocer, supposing, of course, that they are what they are represented to be, so the grocer buys them of the wholesale dealer. Now, if the goods you buy are impure, you can sue the grocer, but the grocer can sue no one, as the dealer from whom he buys or the original manufacturer of the article is generally outside the jurisdiction of the State. That does not seem quite just.

A member of the firm of Joseph R. Peebles' Sons when interviewed, said:

Why, of course, we favor the movement. Nothing would please us more than to see the edible goods sold to the people raised to the standard which the State requires.

OTHER OPINIONS.

The opinions expressed by some of the wholesale houses differed little, but the general trend was that the law could not be applied directly to them.

We receive our goods, said one, in boxes or crates with a label on the outside. We never even open the box, let alone examine the contents. If a customer comes in and asks for a certain brand or line of goods, we give him what he asks for, never knowing what the goods are like. If they are what he wants and pleases him, that is all we have to do with it. If the Food Commissioner comes down here, takes a sample from one of the boxes, concerning which we know nothing, except by the outside label, analyzes it, and finds it impure, can he prosecute us? No, I think not. A like case has been tried, and if I am not mistaken was decided in our favor.

A lawyer of considerable prominence in answer to the question, replied:

Legally, a man is accountable for what he sells. It makes no difference whether he knows it is impure or not, if he sells it to the buyer as a stated article, and it is not that article, he is responsible to the full extent of the law. Why, if a man sells you a lot of counterfeit gold dollars for fifty cents apiece, and you are caught with the counterfeits in your possession, do you think you could go free by saying you believed they were genuine because some one told you so, especially when you knew you were buying them at a price far below the cost at which the standard real article could be manufactured? If you will read the laws touching on this subject you will find they are all responsible.

AN EXPLOSION IN CLEVELAND.

A rather mysterious explosion occurred in George Schade's drug store in the Odd Fellows' building on Washington row on January 20, about 8 o'clock, and as a result a large amount of damage was done, particularly to the reserve stock. The explosion, which occurred immediately after one of the clerks had lighted the gas over a sink near the rear of the room, is supposed to have been caused by escaping gas from a pipe leading down from the center of the ceiling into the laboratory. There was a very light report, but the agitation was so strong that the glass in the main doorway in the front part of the room was shattered into fragments, while the frames of the door were forced out several inches from the fastenings.

Mr. Schade was standing behind a counter in the center of the room when the explosion occurred, and together with the two clerks made a hasty exit. In passing through the door Mr. Schade cut his right hand. There was very little flame, the only blaze being occasioned by the burning of a small portion of the paper on the ceiling. The room was filled with smoke, however, and this penetrating the boxes containing drugs and other articles damaged them considerable. Mr. Schade closed up his store until the insurance adjuster had time to investigate the loss.

MICHIGAN.

DETROIT, February 3.—Frank Brainard, a druggist at Charlotte, Mich., was charged with a violation of the liquor law in keeping a drug store not in compliance with the restrictions and requirements imposed upon druggtsts and registered pharmacists by the general statutes of the State. The prosecuting officer relied for conviction upon the proof of a single unlawful sale of liquor and the question before the court was whether under the information a conviction would be justified upon the proof. Brainard was convicted in the Circuit Court and the case was carried up. Last week the Supreme Court decided that a druggist cannot sell liquor as a beverage or without complying with the statutory laws and escape responsibilty for the act. But it is said that a charge of this nature based upon the proofs of a single sale, is an attempt to charge a distinct offense of an invalid and unlawful sale under such general language that the accused is given no information of the precise offense, which it is the intention of the prosecution to prove. If the contention of the prosecutor is sound, the court says, then under such a general information the slightest infraction of the regulations relating to druggists would render the pharmacist liable for keeping a place prohibited by law. Such, it is declared, was not the intention of the legislature. As is well known, Eaton County, in which Charlotte is located, is a rabid local option section, and a large number of drugggists were concerned in the decision, they having been convicted of violating the law once. The liquor cases against all the Charlotte druggists have been *nolle prosequied*. The local option fanatics employed a special officer to get after them. This decision will do away with this espionage.

A. H. Lyman, president of the A. H. Lyman Company, at Manistee, Mich., recently died. He was a well-known citizen, and the drug company which bear his name do a large business in the northern part of the State.

Michigan Mention.

Governor Rich has appointed George Gundrum of Ionia as member of the Michigan Board of Pharmacy.

Fred. R. Fuller, formerly of the City Drug Store, at Newberry, is at present in Los Angeles, Cal.

G. John Schrouder, formerly a druggist on East Bridge street, Grand Rapids, recently died at Denver, where he went for his health. The remains were brought back to the Michigan city for burial.

Stephen Clinton, a drug clerk here, recently got into a row with Jimmie Morton and stabbed him. Morton died of his wounds and Clinton has been arrested on the charge of manslaughter. He pleaded not guility and was allowed to go under $1,000 bail bonds to appear for exmination.

S. D. Roche, druggist and prominent business man at Concord, died last week of Bright's disease. He was a Canadian by birth and went to Concord in 1891, when he purchasd the Champion drug stock, of which he was the proprietor at the time of his death. The remains were taken to Ludington, Mich., for burial.

ILLINOIS.

Chicago Office of the American Druggist.

For the convenience of our large and rapidly growing circle of friends and patrons, both in the retail and wholesale drug trades, we have established a branch office at 60 Wabash avenue, Chicago, where our local representative, CHARLES J. CHAPMAN, will make all friends of the AMERICAN DRUGGIST heartily welcome.

JUDGE DUNNE QUASHES INDICTMENTS AGAINST DRUGGIST REEVES

CHICAGO, Feb. 3.—In a lengthy opinion Judge Dunne granted the motion to quash the indictments against J. W. Reeves, recently indicted on eight different charges of violating the State pharmacy laws. Reeves keeps a drug store at 323 State street.

The motion to quash was made upon the ground a Judge in the Criminal Court had no jurisdiction, as the acts alleged were not comprised in the criminal code and were not deciared misdemeanors.

Judge Dunne held that action against pharmacists charged with violations of any provisions of the pharmacy law should be brought in some civil court of record or before a Justice of the Peace, and it was wrong to begin prosecution by securing indictments.

The decision practically knocks out all the indictments—200 in number -found against 50 druggists by the December Grand Jury.

Assistant State's-Attorney Bottum, who has charge of the pharmacy cases, was inclined to question the opinion of Judge Dunne, but said he had not given the matter enough thought to express a decided opinion.

Judge Goggin yesterday afternoon intimated he would hold the indictments against druggists accused of violating the pharmacy laws were good under the law. His Honor said he thought under the law he could not do otherwise than hold the misdemeanors charged were indictable offenses.

Attorneys E. Erskine McMillan, G. I. Cremer and E. E. Perley argued motions to quash indictments found against William Droegmueller, Thomas Lonergan and others, urging the points made by Judge Dunne in his decision.

Assistant State's-Attorney Bottum said the Legislature had plainly made the violation of the pharmacy law a misdemeanor, and also had directed that the prosecution of misdemeanor shall be by indictment. He also said the Supreme Court has decided misdemeanors are within the jurisdiction of the Criminal Court.

"Well, I think the decision of the Supreme Court is in direct violation of the constitution," said Judge Goggin. "But I must follow the decision of the Supreme Court. I can't overrule it."

"I understand Judge Dunne said to day the pharmacy cases ought not to be tried in the Criminal Court," observed Assistant State's-Attorney Bottum.

"Well, Judge Dunne and I never did agree on legal points," said his Honor.

The cases finally went over for further argument next Monday afternoon, at which time Judge Goggin will render his decision.

News of the Town.

G. W. Sayles, until recently traveling for Hance Bros. & White in Wisconsin, is now with William R. Warner & Co.

A. Oberman, druggist, at the corner of North Clark and Kinzie streets, died at Passadena, Cal., on January 19. The funeral took place at Aurora, Ill.

Victor Barothy, agent of the Low Art Tile Company, recently secured an order for a 12-foot art tile soda fountain for Roger & Diamond's pharmacy in the Great Northern Hotel.

A. E. Remick, manager of the Chicago office of Willam R. Warner & Co., says that business during January showed a great improvement over the corresponding month of last year, and he considers the outlook for trade improving.

E. Von Herrmann, druggist, at Thirty-first street and Indiana avenue, who recently made an assignment, has made an arrangement with his creditors, and the business will be carried on under a trustee until all claims are liquidated.

Mr. James B. Herron, who was for some time past connected with the Hartt Mfg. Company, has severed his connection with them and is now the manager of the Onyx Soda Fountain Company of this city.

The Gross & Delbridge Company's Homœopathic Pharmacy was removed this week to the corner of Wabash avenue and Washington street from 44 Madison street. The new store, which has a frontage of 40 feet, on Wabash avenue and 40 feet on Washington street, presents a very attractive appearance.

The Chicago C. O_2 Union have completed their new plant at Chicago Heights, a new manufacturing town on the Chicago & Eastern Illinois Railroad. They are making all kinds of apparatus for use with liquid carbon dioxide. The works, which cover about 1½ acres, are complete in every detail.

The faculty of the School of Pharmacy of the Northwestern University tendered a reception to the students of the institution and their friends at the school hall, Twenty-third and Dearborn streets, January 25. The laboratories were thrown open to inspection, and for a few hours the college took on a new aspect. Professors Oscar Oldberg and John H. Long gave interesting talks. Professor Long illustrated his letcure with stereopticon views. In the microscopical laboratory a microscopic soiree was in progress. The purpose of the reception was to interest the students in branches which they have not taken up and to give their parents and friends an opportuntiy to learn something of the working of the school.

An explosion of chemicals in the laboratory of the Swanson Rheumatic Cure Company, corner of Monroe and Dearborn streets, on the morning of January 24, caused a fire that did considerable damage to the offices on the second floor of the building. Henry J. Bradwell and J. S. Robinson were both badly burned, and Mabel Finnerty was injured by jumping from a window. The damage done to the building amounted to about $15,000. The building, which is principally used for office purposes, was the scene of a wild rush for the street. Fortunately the injuries were confined to those employed by the remedy company.

Owing to a steadily increasing Western trade Messrs. Whitall, Tatum & Co. of Philadelphia and New York have decided to moved their Chicago office and sample room from the corner of Randolph and Franklin streets to 196 Randolph street, where they have leased the ground floor and basement. The new store has a frontage of 20 feet. The premises will be remodeled according to plans suggested by John F. Matthes, the Chicago manager, and everything will be done to afford the trade an opportunity to thoroughly inspect the large line of sundries carried by this well known house. They will take possession about the first week in April.

MISSOURI.

ST. LOUIS, February 3.—For the past two weeks trade has been unusually brisk. The wholesale houses and traveling salesmen report a similar condition all over the State. This is due to the variable weather which we have been having. It has caused a great deal of general sickness, which probably will not abate until the weather becomes more settled.

A NEW SYSTEM OF DELIVERING GOODS.

Several of the druggists along Broadway have been working the gripmen and conductors on that car line, until now, when they are in a great hurry for something, they telephone the wholesale house and have it put on the cable car. The conductor knows it means a cigar for him, and he sees that it reaches its destination with the least possible delay. Otherwise the druggist would have to send his boy after the article, taking a long time and car fare both ways, or misfill the prescription or lose a sale.

STILL WORKING FOR AN EXTRA MEETING.

A few days after the last meeting of the Board of Pharmacy in this city, when the 54 young men received their "regrets," most of them began to think pretty seriously about when they could try it again. They did not like the idea of waiting until next October, when the board meets again in this city. To go to Kansas City in April means a big expense. They held a meting and drew up a petition. In this they ask the board to hold a special meeting in St. Louis in April. Those who sign this petition agree to pay the regular fee of $3. They also forfeit the privilege of a second trial for the same fee in case they should fail to pass. Over 50 applicants have already signed this. They expect to present it to Secretary Sennewald in a few days. By the next issue it will be known whether the board grants the request or not.

AFTER THE BALL.

The entertainment and hop given by the Alumni Association of the St. Louis Col-

lege of Pharmacy on the night of January 27 was a grand success. The entertainment was much better than had been anticipated by those who attended. The participants were all well known in drug circles of the city. The entertainment was, as stated, a comico-tragic opera.

Several of the drug clerks about town fixed up various bouquets and presented them to the actors. Emiel Bernius, head clerk for the Wolf-Wilson Drug Company, was presented with a head of cabbage having a bunch of celery in the top, a carrot for a handle, and the cabbage was surmounted with toothpicks. Several of the other young men who participated were treated similarly. The ladies all received elegant floral gifts. Supper was served at 12 o'clock and dancing continued until morning. Nearly all the prominent druggists of the city were there. Every one enjoyed it immensely. Chas. Lips had charge of the entertainment and took the leading *rôle*. He deserves much credit for the success of the whole affair.

A LABORATORY EXHIBITION.

During the college term each professor of the St. Louis College of Pharmacy delivers a special lecture under the auspices of the Alumni Association. Next Friday night is Professor Hinrich's turn. Instead of a lecture he has arranged for his senior class in chemical laboratory to give an exhibition in quantitative chemical analysis. The application of recent gasometric methods to the testing of pharmaceutical products will be given special prominence.

ARRANGEMENTS FOR COMMENCEMENT.

At the last board meeting of the College of Pharmacy a committee was appointed to select a hall in which to hold the commencement exercises. For a number of years past the Memorial Hall has been used for this purpose. Those who attended the last two years will well remember how crowded it was. The committee will probably select the Germania Hall this year, as it is much larger and more suitable for the occasion.

The Latest News.

H. C. Mathison is in town drumming up business for the Bromo-Seltzer folks.

The O. B. Strub pharmacy, at 3947 Kossouth avenue, was recently closed by creditors.

The old U. S. Boone store, at Twelfth and Olive streets, is being moved down to Michigan avenue and Kansas street.

The store formerly at Fifteenth street and Washington avenue is the one that recently loomed up at Union Station.

It is reported that a new drug store will soon be opened near King's Highway on Easton avenue.

J. B. Graff will soon move his drug store from 4007 Lee avenue to Lee and Neustead avenues.

Dr. C. I. Wyche is in the city looking after the interests of the Arlington Chemical Company of Yonkers, N. Y.

The Allan-Pfeiffer Chemical Company are now settled in their new quarters at 815 North Seventeenth street.

The drug store formerly at Thirteenth street and Washington avenue is now located at Aubert place and Suburban road. J. R. Douglas is still proprietor.

Dr. J. H. Thierauf, Morgonford road and Connecticut street, was married last week to a very wealthy young lady in the neighborhood.

G. W. Wilson of the Wolf-Wilson Drug Company was married to Miss Minnette Meyer on January 22. The young lady was formerly cashier for this firm.

Dr. Pfeffer, formerly of the City Hospital, has purchased the drug store at Twelfth and Lafayette avenue. This store has changed hands twice during the last month.

W. E. Blackwell, for some time in charge of Dr. Higgenbotham's drug store, at De Soto, is now putting in a stock of drugs in the new building at Broadway and Soulard streets.

Wm. C. Bolm, one of the best known pharmacists of St. Louis, will soon enter upon the study of law. Mr. Bolm has made a success of all his undertakings so far.

Max Knock, Ph.G., has resigned his position in the store at 4100 Finney avenue, and may now be found in the Arcade Pharmacy, Fourteenth street and Washington avenue.

Albrandt & Sons have sold their drug store, at Fourteenth and Washington streets, to the Meyer Bros. Drug Company. The store will soon be moved to the western part of the city.

H. T. Reuter, formerly with the A. G. Wellmeyer Drug Company, Twenty-fifth and Bremen streets, has purchased the R. J. Renne drug store, 914 South Fourteenth street, and is giving it a thorough overhauling.

The "Grave Yard" Drug Store, at Eleventh and O'Fallon streets, has again opened its doors. This time a young enterprising pharmacist has it in charge, but he don't want his name given until he sees how things are going to turn out.

The Rival Hungarian Aperient Waters.

Legal proceedings between the owner of the Hunyadi Janos springs and his English concessionaires, the Apollinaris Company, and other circumstances, have testified to the strained relations between these famous houses, notwithstanding the prosperity which must, we presume, have been common to both. Latterly we heard it stated that there was a final rupture between them, and certain new copy for an advertisement received from the Apollinaris Company for the *Diary*, 1896, seemed to be confirmatory of this rumor.

The subject was of sufficient trade interest to take the *C. & D.* Town Traveler to the offices of the Apollinaris Company in Stratford Place, W. The Apollinaris Company is renowned for the energetic manner in which it conducts its business, whether in regard to lawsuits or advertising. But these new offices in Stratford Place were a revelation. There is as little display as possible outside, but the visitor enters on the ground floor into a spacious and substantially furnished room which corresponds to a city bank, where some two or three dozen clerks are busily engaged in recording the profits acquired from selling water. If the beverages dealt in had been alcoholic, the signs of prosperity could not have been much more striking.

The *C. & D.* T. T. was conducted into the department of Mr. Julius Prince, one of the directors of the company, another room of vast dimensions, separated from the general office, and Mr. Prince guided him by devious staircases to the office of Mr. Steinkopff, another director—if a salon which was probably once a ballroom can be called an office.

In reply to a comment on the imposing appearance of the office downstairs, Mr. Prince said that the clerical work of the home business exclusively was carried on on the ground floor. Their export trade, he added, was conducted on the second floor. The first floor was their "Springs" department—that is, where they carry on their correspondence with the Continental establishments from which they draw their supplies.

"Yes, it is the fact that we are giving up our concession for the supply of the Hunyadi Janos water next March," said Mr. Steinkopff. "Our contract was made in 1875, and would expire at the end of the century. But we have exercised our option to determine it earlier. Our relations with Mr. Saxlehner have been strained almost from the first. We spent £54,000 in introducing the Hunyadi Janos water and in extending its sale. That expense fell upon us exclusively, and we have considered that we were entitled to more support from the Saxlehners. We do not think they have protected us so well as they might have done from the importations of the water from the Continent by other firms; we have believed that the water supplied has not always been, as it should have been, from the richest springs; we worked up the trade to 1,500,000 bottles a year, which was the extreme limit contemplated when the contract was made, and then Mr. Saxlehner wanted to make new conditions if we went beyond that quantity. So we have been in continual disputes with him and his successors, and have had several lawsuits with them, as you know. Some five or six years ago I bought an estate near Budapest, in the bitter water district, with springs on it which yield a very rich bitter water, and it is this water which we propose to sell in the future. These springs have been placed under the control of the Royal Hungarian Chemical Institute (Ministry of Agriculture), Budapest, and we shall be able to guarantee that uniform strength and composition which many eminent members of the medical profession tell us is of great importance."

"And the name?"

"It will bear the trade-mark 'Apenta,' which has been registered. But it is drawn from the Uj Hunyadi springs."

"Are there many Hunyadi springs?"

"Certainly. Hunyadi has become a generic name for the bitter waters of Hungary. There is Hunyadi this, Hunyadi that, Hunyadi t'other. (Mr. Steinkopff gave these titles in the original Hungarian, and mentioned about a dozen of them.) Hunyadi, you know, was a famous Hungarian hero, who defeated the Turks several centuries ago. Janos is simply John. In America there are half a dozen Hunyadi waters sold side by side with Saxlehner's."

The new label for the "Apenta" water, proofs of which Mr. Steinkopff had before him, will be a very characteristic one. It will surround the bottle and will be of a bluish-gray ground, with the word "Apenta" crossing a red egg. On another part of the label is a yellow square bearing the well known red diamond trade-mark of the Apollinaris Company, Limited. In closing the interview, Mr. Steinkopff said the price for the new water would be such as to defy competition.—*The London Chemist and Druggist.*

HINTS TO BUYERS.

J. Hopkins of Lynn, Mass., who is refitting his drug store at great expense, has ordered a handsome set of new counter and prescription Torsion balances. They will match the wood of the fittings and add to the beauty of the place considerably.

We would advise our readers to take advantage of the liberal offer of the Flag Salt Remedy Company of Savannah, N. Y., who will send, free of expense, one dozen packages of their 10c. size and 300 samples to any druggist who will agree to distribute them.

Fifteen years of careful study of the requirements of the drug trade in the matter of Corks has enabled the Paddock Cork Company, 21 Dodworth street, Brooklyn, to turn out Corks which for prescription use leave nothing to be desired. Write them for free sample and price on their Prescription Corks, for they can give you some vaulable pointers.

George Klotz of Ed. Pinaud's arrived from Europe on La Touraine on the 2d inst. He will remain here about three weeks before returning to the home office at Paris. In the meantime the importation offices, at 46 East Fouteenth streeet, report enormously large sales of their new production, Violette Reine, which seems to have largely caught the fancy of the fair sex.

Theodore Noel, geologist, 857 West Polk street, Chicago, has a breezy, straightforward announcement to druggists on page 15 which will bear reading. He says that he is able and ready to prove that he has got something which sells as nothing ever sold before, and which will make money for every druggist who handles it, and he proposes to prove this at his own expense. Write him a postal card to find out about it.

Externals count for a great deal with the public, and a good package neatly put up predisposes the public in the favor of any druggist. This fact can be taken advantage of by the shrewd business man by using only the best and most artistic Boxes for pills, powders, etc. The E. N. Rowell Company, Batavia, New York, have made a careful study of the needs of the druggist in this line, and they will send you, on application, a pamphlet which will give you some valuable ideas upon this subject of proper boxing.

One of the objections to most of the Kalsomines on the market is that they have to be applied hot. While this may appear to the uninitiated as a simple matter it becomes a very serious one in practice. The Troy Cold Water Kalsomine Company of Troy, N. Y., have devised a Kalsomine which works equally well with hot or cold water, and they sell this at a price which is really no more than what is paid for the ordinary hot water Kalsomine. They have a special offer in their advertisement on cover page which every druggist should read.

This is just the season when provident housekeepers cast about for plans as to their summer campaign against the various insects which most affect the dwellings of man, and the knowing pharmacist will be prepared by having in stock a supply of Mrs. J's Bug Exit, which is made, sold and warranted by the New York Mfg. Company, Schenectady, N. Y. This preparation is warranted both to kill and to sell, and druggists who want to carry a profitable article should write them for circulars and prices.

A very interesting exhibit is to be seen in the offices of Johnson & Johnson. It consists of two long glass tubes. One is filled with the most heterogenous collection of food, digestible and indigestible, imaginable, in layers, and the list includes cheese, mince pie, fried sausage, cod fish, roast beef, tapioca, mixed cake, crackers, salmon, etc. In the other tube is the same conglomeration, only that it has been digested by the action of Papoid, the powerful digestant for which Johnson & Johnson are the sole agents.

The Low Art Tile Company of Chelsea, Mass., originators and sole manufacturers of Low Art Tile Soda Fountains, enter upon their sixth year under the most promising auspices. The number of their January orders are far in excess of any previous year, while the outlook for a steady increase in the season's business is most encouraging. For so comparatively young a concern this company have made marvelous headway, and are already abreast with some veterans whose boast is—"A half century in the business."

Dispensers and purchasers generally should bear in mind that Antikamnia is never put up in bulk. It is always sent out in ounce packages, and every tablet of Antikamnia and of Antikamnia combinations bears the monogram A. K., together with the letter or letters of the other substance forming part of the tablet. C A K, for instance, is shown in monogram upon the 5 grain Antikamnia and Codeine tablet. The Antikamnia Company employ no agents or salesmen of any kind, consequently any person peddling Antikamnia and representing himself as agent to the company may be pronounced a fraud.

Perfume Travelers.

Williams, Davis, Brooks & Co. of Detroit have ten men traveling in the interest of their perfumery department, their names and territory being as follows: C. H. Cobleigh, New England States; E. F. Stout, New York State; J. C. Steel, Atlantic Coast States; R. P. Domschke, New York and Brooklyn; Fred. A. Wood, Ohio and Western Pennsylvania; J. C. Carmack, Southern States; Hayes Young, Wisconsin and Minnesota; E. H. Lee, Iowa, Nebraska, Kansas and Missouri; J. C. Meseroll, Indiana; W. R. McMillan, Michigan. All but the last named handle the perfumes exclusively, but Mr. McMillan carries a line of sundries besides.

How a Druggist Should Advertise.

Druggists throughout the country have at last found out that advertising their goods does much toward selling them. Some of the more conservative pharmacists offer objections to newspaper advertising as unprofessional and others claim that they are unable to trace good results to this method of publicity.

No valid objection can, however, be made to the method which has originated in the fertile mind of F. H. Smith, one of the most successful business men in East Orange, N. J. Mr. Smith is the printer and engraver who has the undisputed reputation of doing the finest and most artistic work in the fashionable Oranges. He issues an attractive little monthly publication, which he sells to but one pharmacist in a town or a section of a city, giving information of interest to the patrons of drug stores, and intended for free distribution by the druggist. Each proprietor who adopts this means of advertising is allowed some space in the paper, in which he can insert whatever matter he desires.

This system of advertising has already met with marked success in other branches of business, and the druggists who have already taken it up have found it highly profitable.

Those desiring additional information can obtain full particulars and a sample of the paper by addressing F. H. Smith & Co. East Orange, N. J.

A Handsome Container.

J. M. Maris & Co. of Philadelphia have gotten out a screw top vaseline bottle which is one of the neatest things that has ever been put on the market for selling petroleum jelly in. We illustrate the new bottle herewith, and Maris & Co. will be pleased to quote prices to any of our readers whose trade appreciates an elegant package.

Cucumber and Elder Flower Cream.

In this preparation are combined the juice of cucumbers, the extract of elder flowers, and milk made from almond nuts. In appearance it resembles cream from milk, and is neither greasy nor clammy. It has marvelous power to soften, whiten, cleanse and purify the skin. It cleanses the pores of the clogging sebaceous matter, thus keeping away blackheads and other blemishes. It is healing, soothing and cooling to the skin.

These goods, as well as all of Mrs. Gervaise Graham's preparations, are delivered to druggists free of all freight charges, no matter how small the order. Have you asked for copies of "Beauty," a journal devoted to the cultivation of physical beauty. Copies for free distribution will be mailed on application to Mrs. Graham, 1424 Michigan avenue, Chicago.

Their Busy Season.

January, as a rule, is a quiet month in most lines of trade. The Morford Cash Register Company, Chicago, take an exception to this rule and claim that they have shipped more machines than in any one month of 1895. They say that all registers sold last year have been doing missionary work for them, and they consider each machine that goes out is a silent salesman for their business.

Perhaps their liberal trade journal advertising and the establishing of numerous agencies throughout the country has

something to do with their increased trade. They have found that they have a register that is exactly what the majority of druggists need, and if you are not already using one write for fully descriptive circular with prices, mentioning that you are a subscriber to THE AMERICAN DRUGGIST.

No Damaged Mail.

For sending valued printed matter through the mails with a certainty of its being delivered in good condition there is nothing to equal Lavette's Patent Mailing Envelope. By its use photographs are sent with letters inside and go among first-class mail matter, and therefore are not liable to be crushed or damaged. The price is such that they are within the reach of all, selling at two for a nickel. Samples and particulars of sizes will be sent on request by the patentee and manufacturer, H. C. Lavette, 203 Randolph street, Chicago.

Homœopathic Vials.

The manufacture of Homœopathic Vials is a branch of glass manufacture which has been kept almost entirely separate from the manufacture of a general line of bottles, and there are only a very few actual manufacturers in the United States. Homœopathic Vials are all made from tubes, and the drawing of these tubes is a great art requiring the highest skill and the most perfect material for the production of satisfactory results. This can readily be understood, that these tubes of glass are drawn out in 100 yard lengths ! Among the largest, if not the largest, manufacturers of this line of goods are the Standard Flint Glass Works of Philadelphia, who should be consulted by any of our readers needing anything in the way of Homœopathic Vials before purchasing.

Big Profits for the Retailer.

One of the best brands of Cubeb Cigarettes put on the market are those specially prepared by Frederick Hill, Mount Morris Bank Building, 125th street and Park avenue, New York. They are sold at a rate that will command the attention of retail druggists and they are claimed to be a sure remedy for asthma, bronchitis, diseases of the throat, etc. While winter weather prevails a big sale of this class of goods may be looked for.

The cigarettes are put up in attractive boxes, and are carefully wrapped in tinfoil. They are neat in appearance and cannot help being rapid sellers. Send for sample box and special prices, mentioning the AMERICAN DRUGGIST.

A Tonic in the Winter

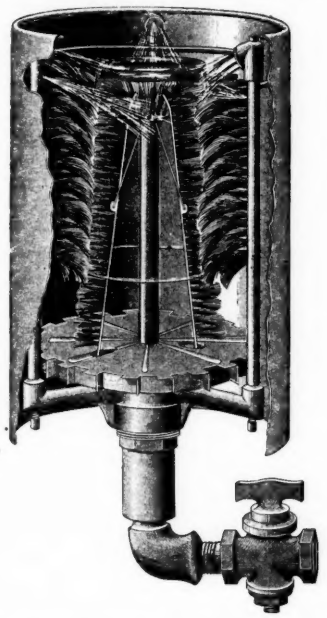
As a winter tonic Vin Mariani is meeting with an unusually large sale, which proves that the public are beginning to recognize its merits. The Ideal French Tonic Wine is especially valuable to those who have suffered from the grip, influenza, or any malady, in destroying the poison in the blood, as it quickly removes all accumulated poisons from the system, improves the circulation, enriches the blood and strengthens the stomach and bowels, as well as all the other vital organs of the body. No medicine could be more agreeable to the taste and at the same time so beneficial.

They Always Stick.

The special advantages of the Sure Catch Poison and Sticky Fly Papers made by the J. Hungerford Smith Company of Rochester, N. Y., are being appreciated by retail druggists all over the country for the very simple reason that the goods are sold readily because of those advantages. The new sticky composition used is a soft, heavy coating of highly viscous material that will stand exposure two or three times longer than heretofore, and being soft and viscous, will catch flies perfectly in cool weather as well as hot.

Clean Tumblers.

All authorities on soda water agree that a primary requisite to success at the soda counter is clean tumblers, and clean tumblers cannot be had without using the best and most practical apparatus



for cleaning them. We illustrate herewith a revolving brush tumbler washer which has in it many points of excellence, and which the manufacturers claim to be the only successful revolving brush tumbler washer on the market. One of the best evidences of the practical value of the washers is the number of testimonials which the manufacturers, Frost & Mercer of Grand Rapids, Mich., have received from persons who have used it. If you will send them a postal card they would like to send you some of these testimonials together with some interesting facts on the subject of tumbler washers.

The Essential Oil Market.

The February price-list of McKenzie Bros. & Hill contains several items of unusual interest. Their review of the essential oil market for the month reads as follows:

During the month of January the essential oil market has been generally dull, with the exception of oils citronella, sassafras (natural and artificial), anise and cassia.

The first named has again advanced and is held in strong hands. Notwithstanding the advance in price during the past year, statistics show an increase in total export from Ceylon of 113,276 pounds over the previous year, and an increase of 413,684 pounds over the year 1893. We look with interest to the future of this oil, and think the advance largly speculative.

Many users of citronella are now substituting artificial sassafras. The price has advanced materially owing to unusual demand, the increase in price of raw material and scarcity of same. The future of this oil is toward higher prices.

Anise is very scarce and will go higher. Cassia is kept steady by the offering of low grade and adulterated oils.

Any of our readers who have not received this price-list should write for copy to McKenzie Bros. & Hill, 52 Water street, New York.

Review of the Wholesale Market.

NEW YORK, February 8, 1896.

It should be understood that the prices quoted in this report are strictly those current in the wholesale market, and that higher prices are paid for retail lots. The quality of goods frequently necessitates a wide range of prices.

Trade in the several departments of Drugs, Dyestuffs and Chemicals fell off a little during the month of January, but as January is usually a dull month the lessened volume of business is never regarded as significant of trade depression. February opens with a better tone and dealers everywhere speak confidently of the prospects of a return to the old conditions of activity. The uncertainty which prevailed regarding the disposition of the new Government bonds caused an uneasy feeling among merchants generally, but now that confidence has been restored a revival of speculative interest will naturally ensue and tend to materially increase the volume of business during the year. The movement of stock has increased to some extent during the past few days, the bulk of business coming from the West and South, with a fair representation from other sections of the country. Prices are firm as a rule and where changes in value have occurred the majority have been in favor of holders.

ADVANCED.	DECLINED.
Acetanilid,	Oil cubeb,
Cream tartar,	Caffeine,
Oil wormseed,	Colocynth apple,
Rochelle salt,	Arsenic, white,
Seidlitz mixture,	Cubeb berries,
Oil sassafras,	Lycopodium,
Sassafras bark,	Oil peppermint,
Opium,	Cod liver oil,
Oil citronella,	Balsam tolu.
Oil lemon,	
Oil sweet orange,	
Oil pennyroyal,	
Celery seed,	
Sabadilla seed,	
Insect flowers.	

DRUGS.

Acetanilid has advanced in sympathy with the crude material and is now quoted 28c. to 30c.

Alcohol continues in active demand and held firmly at the previous range of $22 to $25 for grain and 90c. to $1.20 for wood and alcoholene, respectively. Contrary to expectations there is no immediate prospect of a change in price.

Atropine has hardened a trifle in the interval owing to the advance in Bella-

donna, and though values are as last quoted, an early advance is anticipated.

Balsams have not varied materially in the interval either as regards price or demand. The single exception is Tolu, which is quoted a fraction less, say at 47c. to 48c. *Tolu* is steady at $2.30. *Oregon Fir* is held and selling fairly within the range of 60c. to 65c. and 70c. to 75c. for barrels and cases, respectively. *Canada Fir* has sold fairly at the quoted range of $2.15 while *Copaiba* is inactive at 32c. to 35c.

Barks are without new features of interest save *Cascara*, which is a fraction higher and quoted steady at the advance; quoted 3¾c. to 4½c. *Sassafras* is maintained with some show of firmness at the recent advance to 7c. to 10c. *Elm* is yet quoted 10c. to 11c., and *Soap*, 3¼c. to 3½c.

Buchu Leaves are meeting with a fair jobbing inquiry and prices are well sustained in the face of a slight scarcity of good grades. Numerous small sales of both short and long are reported at 12c. to 15c. and 20c. to 22c.

Cacao Butter is held less firmly and we hear of sales at 31½c. to 32½c., according to quantity. The auction sales in the London market marked a lower range, Cadbury's realizing 3⅛d.

Caffeine continues weak in price under more or less sharp competition. For lots of 5 pounds $6 is now a common quotation, and that price was said to have been accepted in some quarters for smaller quantities, though $6.25 to $6.50 is generally asked.

Cassia Buds are developing a firmer tendency, though no quotable change in price is yet reported; 18c. is quoted steady.

Coca Leaves are in fair demand and firm as to price, but selling in moderate quantities only. Prices remain at about 27½c. to 30c. for Huanuco and 20c. to 22c. for Truxillo.

Cubeb Berries are still offered at 10c. for XX stemless and 7c. to 9c. for other varieties, with only a moderate business reported.

Colocynth Apple is still weak and unsettled, with only a limited demand experienced. Purchases of Trieste can be made at 58c. to 60c. and Spanish at 30c. to 32c.

Cod Liver Oil has receded a notch or two. Norwegian in barrels may be secured at $47 to $48, though higher prices are asked for prime grades. Offerings are light and indifferent.

Insect Flowers are very firm in the foreign market and stock here is held stiffly from 14½c. to 15c. upward, according to quality.

Insect Powder has developed no new feature of consequence, either as regards price or demand, though the position of the flowers leads some in the trade to anticipate an early rise.

Lycopodium prices remain at about 47c. for Politz and 44c. to 45c. for other brands, with numerous small sales reported at these figures.

Morphine continues in moderate demand for consumptive purposes at the previous range of say from $1.45 to $1.60 for bulk.

Opium has moved out with more freedom during the past few days and values have stiffened a trifle in consequence, with prominent holders asking a slight advance in some instances from the quoted range. Advices from the primary markets are more or less strong, and state that holders in Smyrna are asking 7s. 10d. and that Chinese buyers were directly or indirectly bidding 7s. 7d. for ordinary druggists' quality there and 8s. in London. The fact was emphasized also that the stock here and due to arrive in the near future is under remarkably close control. In this market $2 to $2.05 will still buy broken packages, while cases are quoted $1.95 to $2. Powdered opium remains at $2.55 to $2.65 for ordinary and $3 to $3.10 for high tests.

Quinine is without change as regards price and reports generally point to moderate sales and a lack of inquiry. Agents still quote 30c. for P. & W. and 28c. for other brands in large cases. Outside lots of foreign are quoted at 26c. to 27c. in bulk.

Saffron, American, steady in price and likely to advance; 40c. is now quoted for small quantities. Valencia Saffron offers at slightly lower prices, or say $6.50 for high grade goods, others, however, quote $7.25. Alicante offers generally at $4.75 to $5.

Tonka Beans, Angostura, are in fair demand, with sales at $2.50 in original packages.

Vanilla Beans are firmly maintained at our quotations.

DYESTUFFS.

Cutch continues steady in price and in fair demand; sales of bags at 5c.

Divi Divi is easier at $40 to $42, with a lack of important inquiry.

Gambier is firmer, with spot lots selling at 4c. to 4⅛c.

Nut Galls remain very firm at 13c. to 15½c. for Blue Aleppo in sympathy with high cost in the foreign market.

Sumac, Sicily, is in better supply and easier. We hear of sales of moderate quantities, $47.50 to $48, and those figures would doubtless be shaded for round blocks.

CHEMICALS.

Acetate of lime has receded from the firm position taken last week and sales of brown are making at 80c. to 85c. and gray at $1.30 to $1.35c.

Arsenic, white, is a shade easier, with English selling in moderate quantities at 5¾c.; German at 5¼c spot and Belgian to arrive at 5c.

Blue Vitriol continues weak and unsettled, with prices quoted all the way from 3¾c. down to 3¼c., as to size of lot.

Borax is weak and irregular, with California refined selling in small lots at 6c., ¼c. less being accepted for larger parcels.

Chlorate Potash still varies somewhat in price and fair sized lots can be secured at about 9¼c., though 9½c. is generally quoted.

Carbonate Potash, which offers at present at about 4¾c. to 5½c., according to quantity and quality, is likely to be advanced 25 per cent. by a recent Custom House decision which makes the article dutiable at 25 per cent. instead of free, as the law has hitherto been construed.

Cream Tartar froms second hands at less than 26½c. has been about all taken up and only a limited quantity can now be obtained at the price. Manufacturers' prices remain at 27c. for crystal and 27c. to 27¼c. for powdered.

Nitrate of Soda is high for future shipments, but round lots on spot can still be purchased at about 1.70c.

Rochelle Salt has advanced another 1c. and manufacturers are now quoting from 21c. to 21½c. for bulk, according to size of lot.

Seidlitz Mixture has also undergone a fresh advance of 1c.; manufacturers now quote 17½c to 18c. for bulk, according to quantity.

ESSENTIAL OILS.

Anise continues to sell quite freely in small quantities and the market appears well sustained at $2.60.

Cubeb is a fraction lower and dull, with 90c. quoted by some holders.

Cassia is held less firmly owing to recent arrivals, but prices are as previously quoted.

Messina essences are firmer in sympathy with higher cables from the primary market, but fairly good stock here and rather sluggish demand prevent full realization of prices on a level with present import costs. Sanderson's lemon is now quoted at $1.30 for 1895 crop, and $1.35 for 1896 crop; orange at $2.12½ for Sanderson's and $1.72½ for Marsalla.

Wormseed has hardened a trifle due to light supplies and $1.65 is now the inside figure for small quantities with up to $1.75 asked.

GUMS.

Arabic continues very firm in the foreign market and prices here show a rising tendency, though no quotable change is yet reported.

Camphor remains at 59c. for city refined in barrels, and 60c. in cases, and 58c. to 59c. for Japanese in cases. Demand is light and offerings are still extremely reserved.

Chicle is held firmly at 37c. upward with a rising tendency in view of recent small arrivals.

Shellac has met with fair inquiry for consumption and prices are steadier, with T. N. selling at 22c. to 23c., D. C. at 31c. to 32c, Garnet at 23c. and Diamond I. and V. S. O. at 28c.

ROOTS.

Ipecac has sold at a slight advance in the London market, but prices here are as previously quoted, say $1.30 to $1.40.

Orris is in better supply, but prices are unchanged.

Sarsaparilla, Mexican, is in better supply and values are slightly easier, with 5¼c. to 5⅛c. now quoted.

Nothing new transpired in any of the other roots, business as a whole being flat.

SEEDS.

Anise, Italian, has been in demand of late, though prices are quotably unchanged. The range of 6¼c. to 6½c. is yet quoted in most instances.

Celery is maintained with some show of firmness at 12½c. to 13c., but important demand is yet lacking.

Coriander does not offer under 4¼c. for natural or 4½c. for bleached magalore, but the market is still devoid of activity.

Hemp, Russian, is a trifle irregular with, however, 2⅜c. to 2½c. generally quoted.

Rape, German, while not higher in price is much firmer and selling now at 2¼c. to 2⅜c., as to quantities.

Mustard, California yellow, is in better supply, though prices remain at the previous range of, say, 2¼c. to 2½c. Brown is steady from 2¾c. to 3¼c.